PRINCIPLES AND RATES OF PLANNING AND DESIGNING A SUSTAINABLE TOURISM HERITAGE CENTER IN DAHAB

"REVIVING THE MEMORY OF THE PLACE"

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دهب

DAHAB

FRAMEWORK

- Project Goals
- Research Question
- Research Hypnosis
- Research Skeleton
- Chapter 1:
  - -History of the project Location
  - -General Components of the project
  - -Detailed Components of the project
- Chapter 2:
  - -Area Schedule
- Chapter 3:
  - -Designing Rates and Standards
  - -Planning Rates and Standards
- Chapter 4:
  - -Project Examples
- Chapter 5:
  - -General and Detailed design trend
- Chapter 6:
  - -Structure System
- Chapter 7:
  - -Site Analysis

INTRODUCTION

Dahab, a coastal town on the Gulf of Aqaba in South Sinai, Egypt, holds a rich historical and cultural heritage. Its unique Bedouin population, pristine coral reefs, and captivating marine ecosystems have made it a sought-after tourist destination. However, alongside its natural beauty, Dahab faces a pressing challenge: mounting garbage and environmental degradation.

In response to this urgent need, our graduation project aims to design a sustainable tourism heritage Centre that not only celebrates Dahab's past but also contributes to its future. By reviving the memory of the place, we envision a Centre that educates visitors, engages the local community, and fosters responsible tourism practices.

PROJECT GOALS

Devising the Foundations and Standards for planning and designing a sustainable tourism heritage center in Dahab "Reviving the memory of the place"

RESEARCH SKELETON

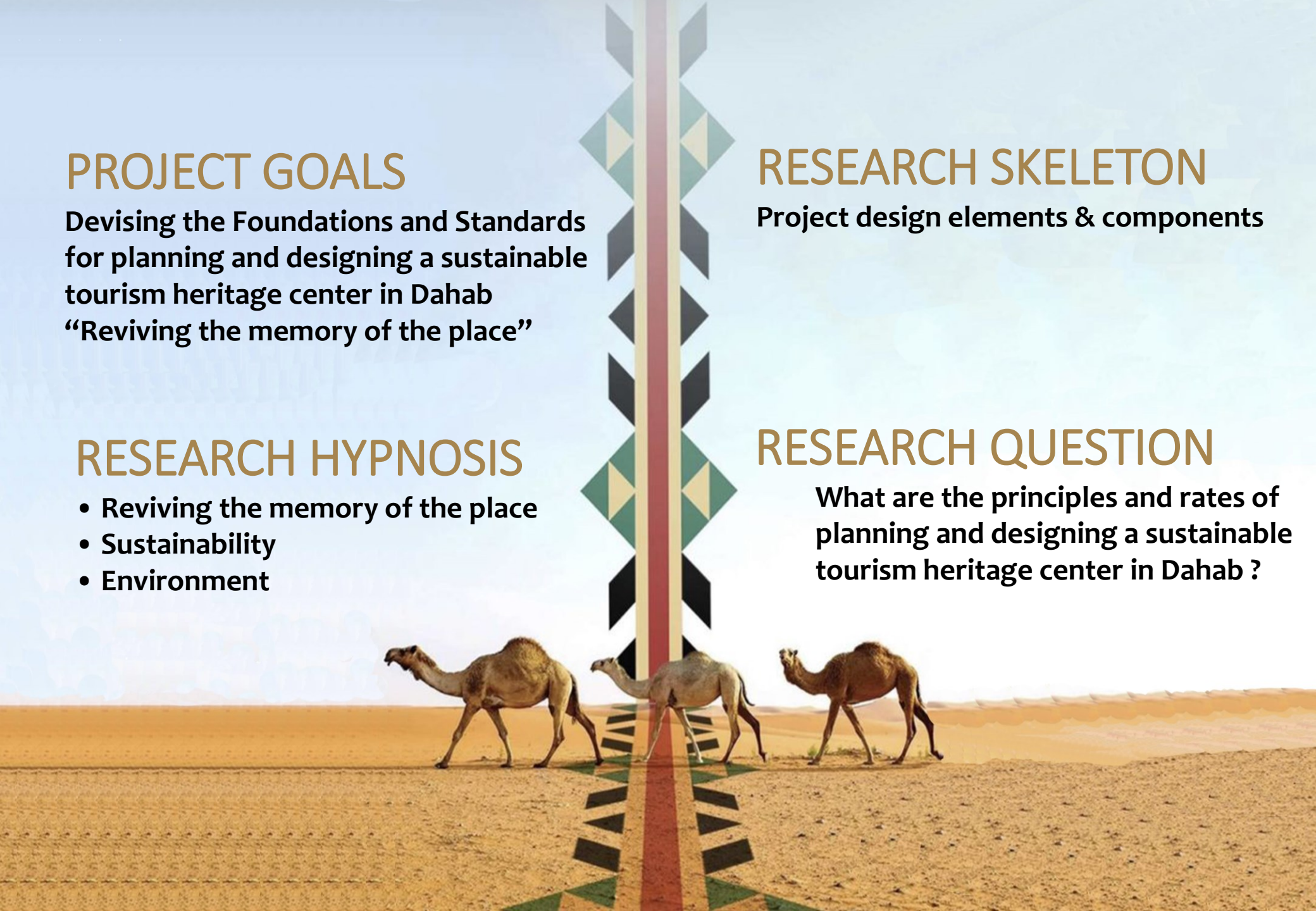
Project design elements & components

RESEARCH HYPNOSIS

- **Reviving the memory of the place**
- **Sustainability**
- **Environment**

RESEARCH QUESTION

What are the principles and rates of planning and designing a sustainable tourism heritage center in Dahab ?



CHAPTER 1

- History of the project Location
- General Components of the project
- Detailed Components of the project

RED SEA
SINAI

Dahab history

- **Dahab (Egyptian Arabic : “ ,دهبgold”) is a small Egyptian town on the southeast coast of the Sainai Peninsula in Egypt, approximately 80 km (50 mi) northeast of Sharm el-Sheikh.**

• Dahab can be divided into three major parts. Masbat, which includes the Bedouin village of Asalah, is in the north. South of Masbat is Mashraba, which is more touristic and has considerably more hotels. In the southwest is Medina which includes the Laguna area, famous for its excellent shallow- water kite- and windsurfing.

• The city originated as a small village for fishermen and then became famous in the nineties after the Egyptian government paid special attention to it, so it established hotels and tourist villages in its heart, and some Bedouins still reside in it until now. The city was famous in the past as a seaport on the Gulf of Aqaba used by the Nabataean Arabs from the second century BC until 106 AD to store their goods in preparation for transporting them to the port of Suez by land through the Sinai valleys, thus controlling the trade route between East and West through Sinai and the port of Dahab. After the October War and the liberation of Sinai, Egypt received the city from the Israeli side in 1982 and was only the old market in the city and a limited number of chalets.

Dahab - Wikipedia

Natural and tourist attractions in Dahab

- **Ras Abu Galum area:** It is a nature reserve and a diving area.
- Bluehole Area: It is considered one of the world-famous diving places.
- **Canyon area:** It is considered one of the excellent diving areas.
- **Al-Asla area:** This is the area where the majority of the population lives, which is estimated at about 75% of the city's population, as Dahab is divided into three main areas: They are: Mubarak City, Al-Zarnouk, and Al-Asla. The city also has Coral Island, located on the Palestinian border, which contains the remains of a historic castle built by the Crusaders.
- **Al-Malil area:** It is a road parallel to the coastal road, and includes many small hotels, cafeterias, and homes.
- **Masbat area:** It is the main commercial and tourist area in the city, which begins with Al-Fanar Street.
- **Masbat Bay:** This is the bay that contains a large group of shops, diving clubs, cafes, camps, and hotels.
- **Al-Mashrabah area:** This is the area that contains a large number of cafes and diving centers, and it also contains Al-Mashrabah Hill. It is a group of warehouses belonging to one of the old ports.

Dahab - Wikipedia

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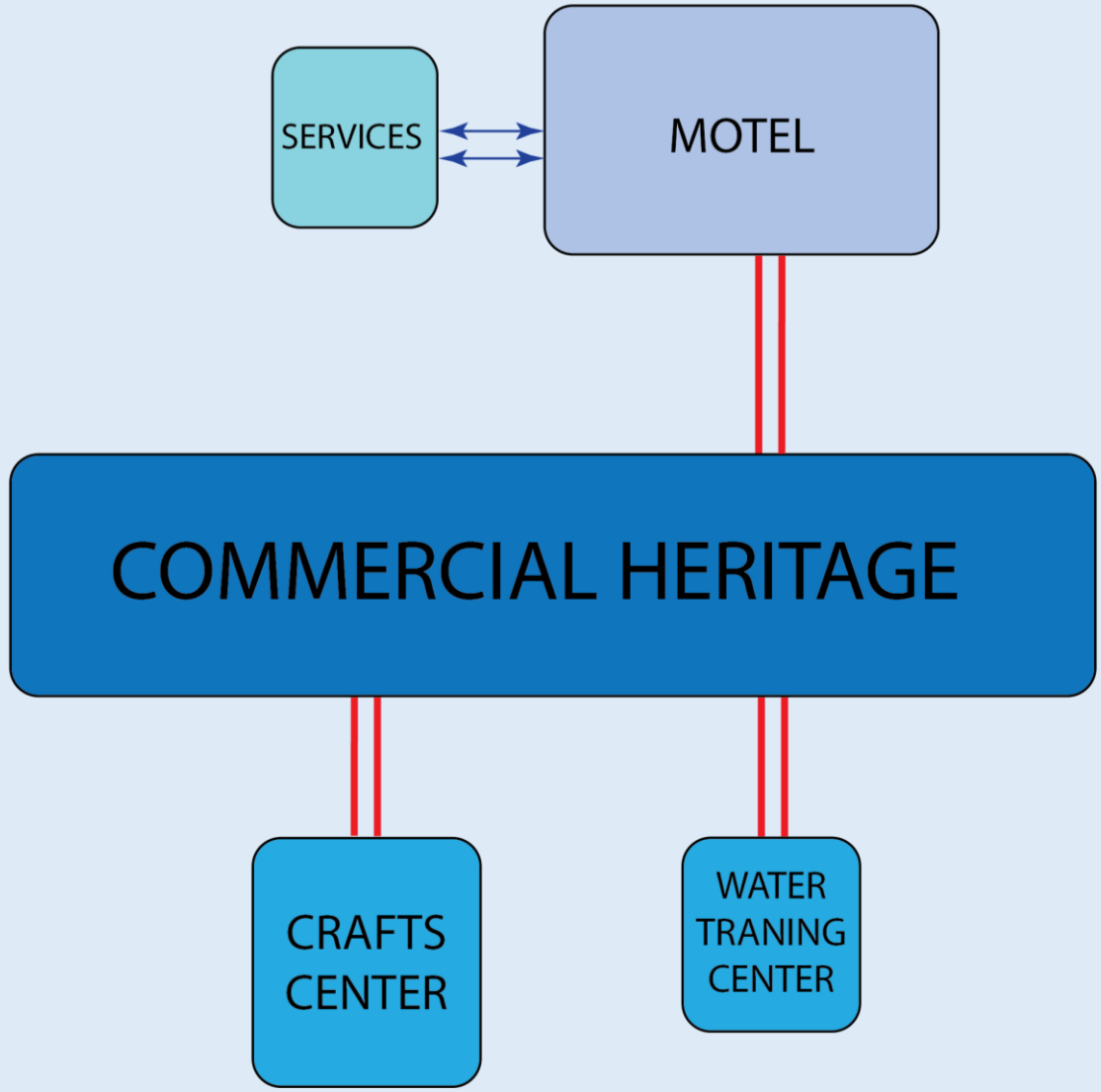
General Components



Detailed Components

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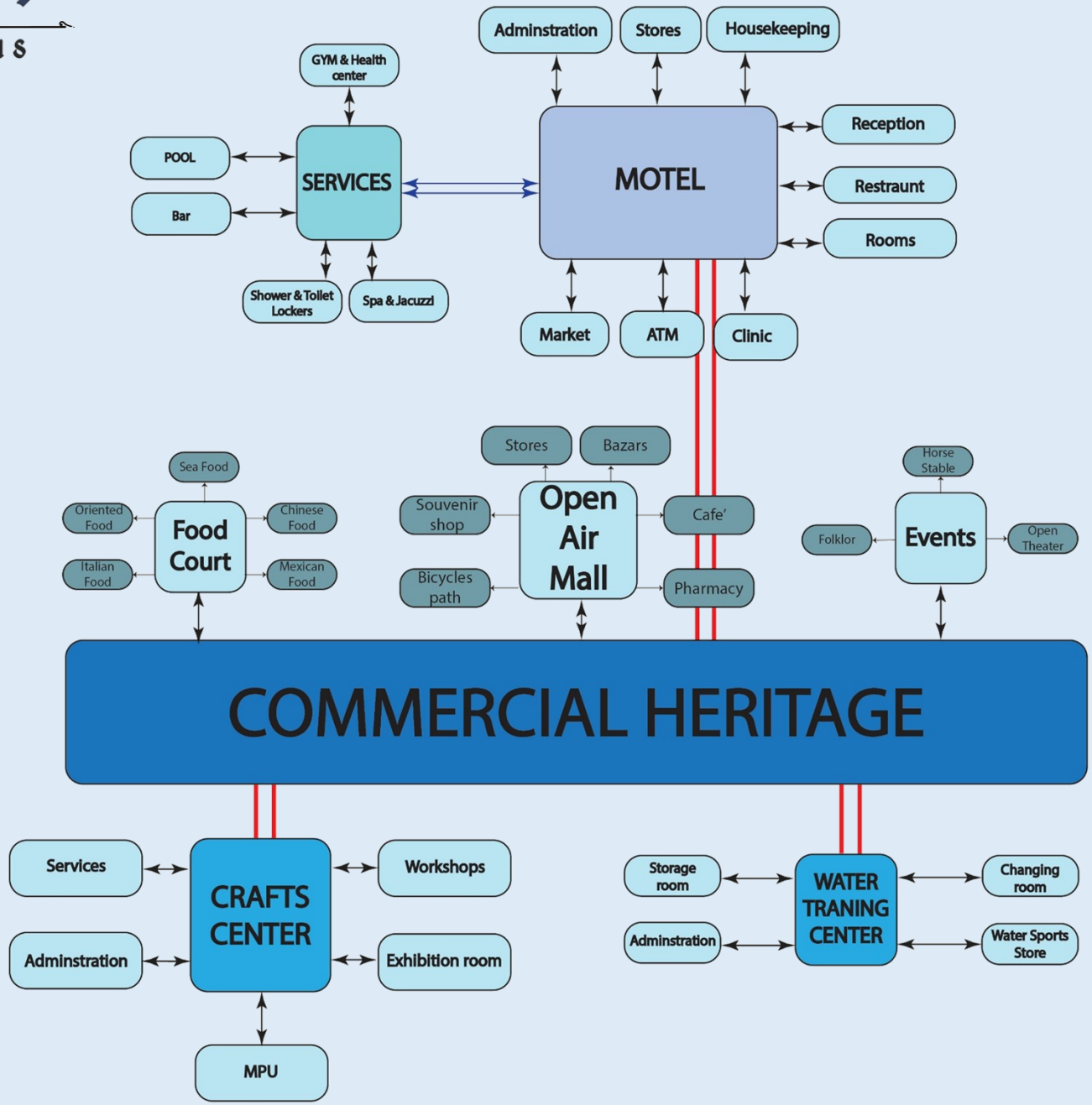

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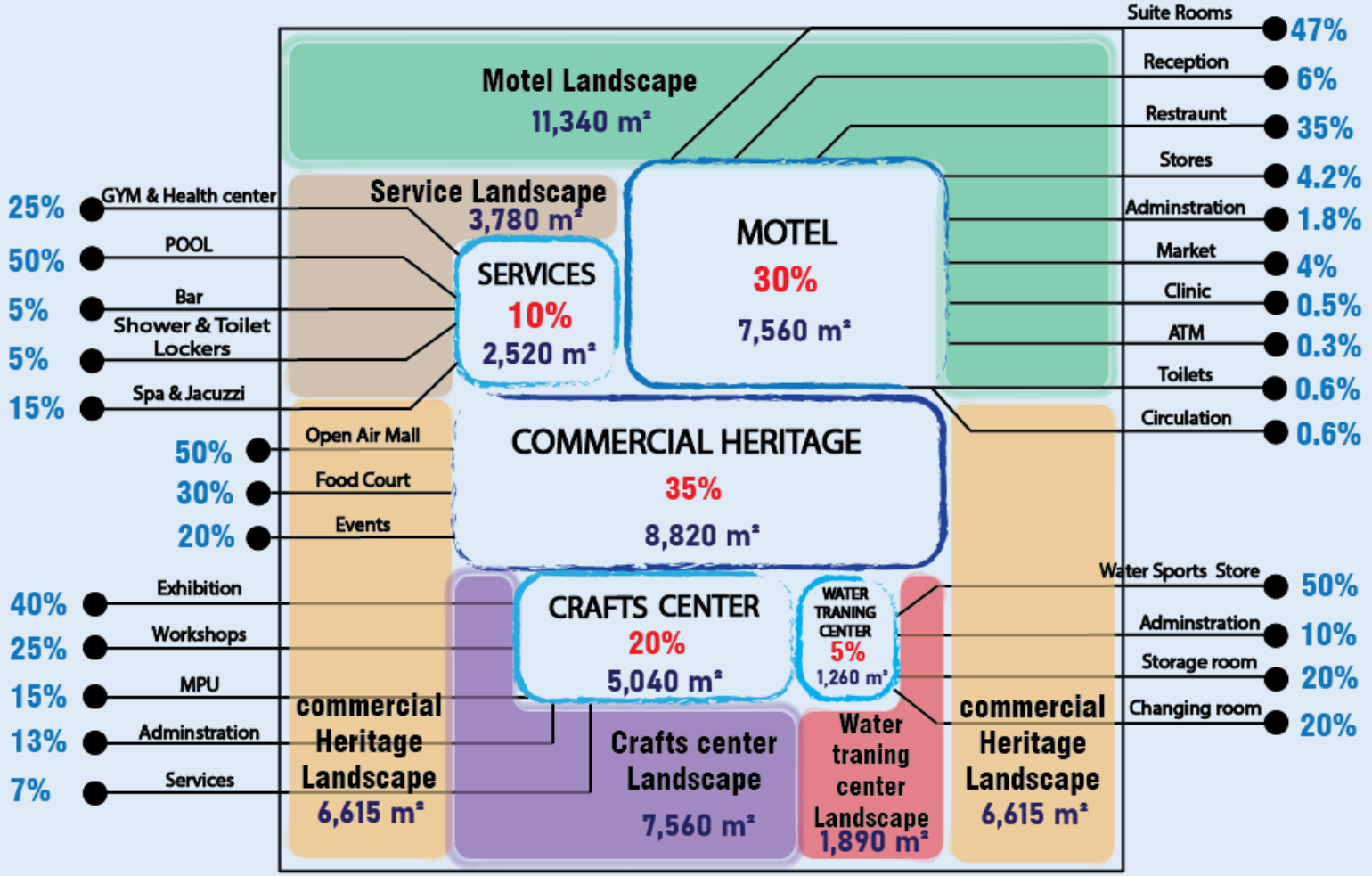
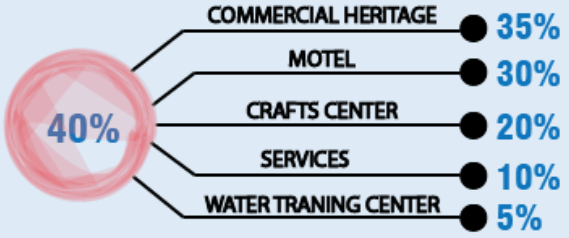
Components Percentage

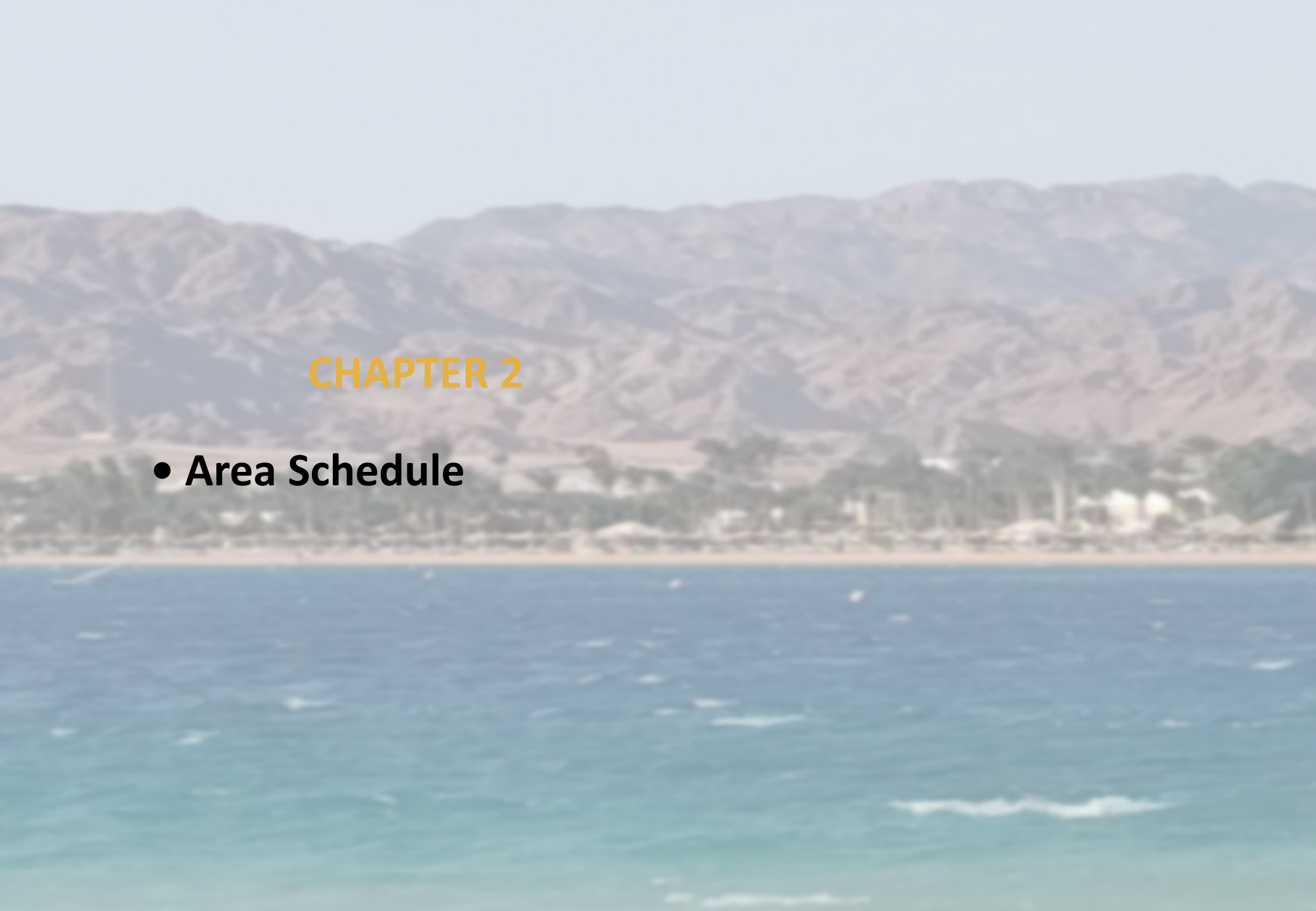
Buildings Area	
Commercial H.	8,820 m²
Motel	7,560 m²
Crafts center	5,040 m²
Services	2,520 m²
Training center	1,260 m²
Total area	**25,200 m²**

Landscape Area	
Commercial H.	13,230 m²
Motel	11,340 m²
Crafts center	7,560 m²
Services	3,780 m²
Training center	1,890 m²
Total area	**37,800 m²**





Total area = 63,000 m²
buildings area = 25,200 m²
landscape area = 37,800 m²



CHAPTER 2

- **Area Schedule**

Main components	Areas					Total area	Component total area
	Floor	Component	Design rate	Component percentage	Component area		
Motel	**Ground**	**Reception**	1.4 m^2/ guest	6%	**396 m^2**	7,560 m^2	**27,560 m^2**
		Restaurants		35%	**2,310 m^2**		
		• Main kitchen	1.0 m^2/seat		256 m^2		
		• Breakfast hall	0.4 m^2/seat		106 m^2		
		• Restaurant kitchen	0.6 m^2/seat		156 m^2		
		• Seating area	2.0 m^2/seat		506 m^2		
		• Food storage	0.5 m^2/seat		131 m^2		
		Restaurants Total every component *2			1,155 *2= 2,310 m^2		
		Stores	1.11 m^2/guest	4.2%	**277.2 m^2**		
		Administration	0.46 m^2/guest	1.8%	**118.8 m^2**		
		Market	0.9 m^2/guest	4%	**264 m^2**		
		Clinic	30 m^2	0.5%	**33 m^2**		
		ATM	0.9 m^2/guest 0.3 m^2/machine	0.3%	**19.8 m^2**		
		Toilet	36 m^2 toilet	0.6%	**39.6 m^2**		
		Rooms 52 suite	60 m^2 suite	47%	**3,102 m^2**		
		Circulation	-	0.6%	**39.6 m^2**		

Main components	Areas					Total area	Project area
	Floor	Component	Design rate	Component percentage	Component area		
Motel	First	Single rooms 65 room	40 m^2	52%	**2,600 m^2**	5,000 m^2	**27,560 m^2**
		Double rooms 30 room	50 m^2	30%	**1,500 m^2**		
		Core	-	13%	**650 m^2**		
		Lobby	1 m^2/ room	1.9%	**95 m^2**		
		Circulation	-	3.1%	**155 m^2**		
	Second	Single rooms 65 room	40 m^2	52%	**2,600 m^2**	5,000 m^2	
		Double rooms 30 room	50 m^2	30%	**1,500 m^2**		
		Core	-	13%	**650 m^2**		
		Lobby	1 m^2/ room	1.9%	**95 m^2**		
		Circulation	-	3.1%	**155 m^2**		

Main components	Areas					Total area	Project area
	Floor	Component	Design rate	Component percentage	Component area		
Motel	Third	Single rooms 65 room	40 m^2	52%	**2,600 m^2**	5,000 m^2	**27,560 m^2**
		Double rooms 30 room	50 m^2	30%	**1,500 m^2**		
		Core	-	13%	**650 m^2**		
		Lobby	1 m^2/ room	1.9%	**95 m^2**		
		Circulation	-	3.1%	**155 m^2**		
	Fourth	Single rooms 65 room	40 m^2	52%	**2,600 m^2**	5,000 m^2	
		Double rooms 30 room	50 m^2	30%	**1,500 m^2**		
		Core	-	13%	**650 m^2**		
		Lobby	1 m^2/ room	1.9%	**95 m^2**		
		Circulation	-	3.1%	**155 m^2**		

Main components	Areas					Total area	Component total area
	Floor	Component	Design rate	Component percentage	Component area		
Commercial heritage	Ground Food court	Sea food	1.25 m^2/seat	6%	**529.2 m^2**	8,820 m^2	**8,820 m^2**
		Oriented food	1.25 m^2/seat	6%	**529.2 m^2**		
		Italian food	1.25 m^2/seat	6%	**529.2 m^2**		
		Chinese food	1.25 m^2/seat	6%	**529.2 m^2**		
		Mexican food	1.25 m^2/seat	6%	**529.2 m^2**		
		Total	-	30%	**2,646 m^2**		
	Ground Open air mall	Stores	1. 5 m^2/guest	25%	**2,205 m^2**		
		Bazars	1.11 m^2/guest	5%	**441 m^2**		
		Cafe'	1.25 m^2/seat	5%	**441 m^2**		
		Pharmacy	30 m^2	1.4%	**120 m^2**		
		Souvenirs shop	1.11 m^2/guest	5%	**441 m^2**		
		Bicycle paths	-	8.6%	**617.4 m^2**		
		Total	-	50%	**4,410 m^2**		
	Ground Events	Horse stable	12 m^2 /horse	5%	**441 m^2**		
		Open theatre	1.35 m^2/seat	10%	**882 m^2**		
		Folklore	1.11 m^2/guest	5%	**441 m^2**		
		Total	-	20%	**1,764 m^2**		

Main components	Areas					Total area	Component total area
	Floor	Component	Design rate	Component percentage	Component area		
Crafts center	Ground	Exhibition	Min 55 m^2	70%	**3,528 m^2**	5,040 m^2	**12,096 m^2**
		MPU	0.8 m^2/seat	25%	**1,260 m^2**		
		Services	-	5%	**252 m^2**		
	First	Administration	2.5 m^2/employee	5%	**176.4 m^2**	3,528 m^2	
		Workshops	Min 150 m^2	65%	**2,293.2 m^2**		
		MPU	0.8 m^2/seat	25%	**882 m^2**		
		Services	-	5%	**176.4 m^2**		
	Second	Workshops	Min 150 m^2	70%	**2,469.6 m^2**	3,528 m^2	
		MPU	0.8 m^2/seat	25%	**882 m^2**		
		Services	-	5%	**176.4 m^2**		

Main components	Areas					Total area	Component total area
Services	**Floor**	**Component**	**Design rate**	**Component percentage**	**Component area**	2,520 m^2	**2,520 m^2**
	Ground	**GYM & Health center**	15 – 65 m^2	15%	**378 m^2**		
		Pool	1.85 m^2/Person	44%	**1,108.8 m^2**		
		Bar	-	1%	**25.2 m^2**		
		Shower, toilets & lockers	Min 12.5 m^2	15%	**378 m^2**		
		Spa & Jacuzzi	2.25 m^2 / Bather	25%	**630 m^2**		

Main components	Areas					Total area	Component total area
Water training center	**Floor**	**Component**	**Design rate**	**Component percentage**	**Component area**	1,260 m^2	**1,260 m^2**
	Ground	**Water sports store**	1. 5 m^2/guest	50%	**630 m^2**		
		Administration	2.5 m^2/employee	10%	**126 m^2**		
		Storage room	1.8 m^2/ person	20%	**252 m^2**		
		Changing room	1 m^2 /person	20%	**252 m^2**		

CHAPTER 3

-Designing Rates and Standards

MOTEL
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-Planning Rates and Standards

STANDARDS AND PRINCIPLES
DESIGN RATES

Designing Rates and Standards

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- **Reception**
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- Circulations
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Reception

STANDARDS AND PRINCIPLES:-

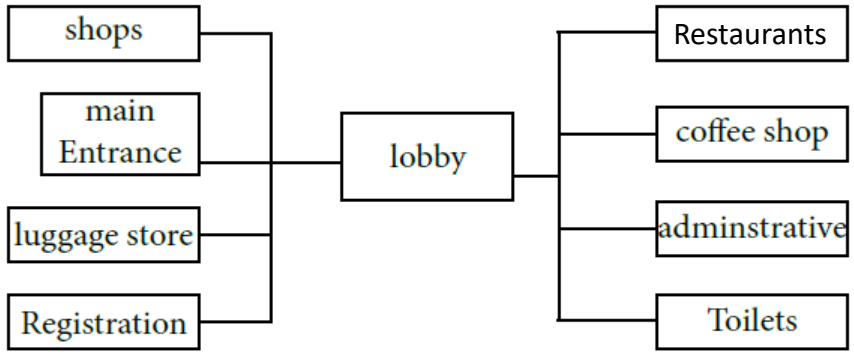
- Reception desk must be visible to the guest immediately on entry
- Reception hall contains (stairs, elevator, counter, information desk)

DESIGNING RATE:-

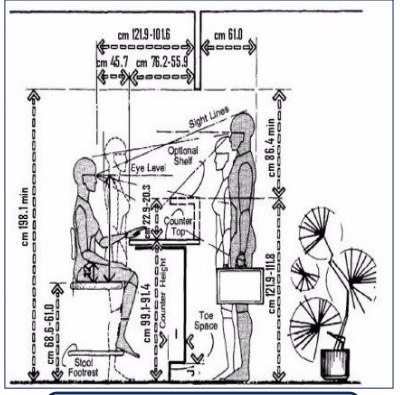
- 1.1 to 1.4 m²/ seat
- lobby area 0.6 m²/ room “2 stars”
- lobby area 1.2 m²/ room “5 stars”

FUNCTIONAL RELATIONSHIP:-

- Reception desk should be on the route to the lifts and the stairs



relationship between the reception components



Reception

Reception

Reception

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- **Rooms**
- Housekeeping
- Kitchen
- Toilets
- Administration
- Circulations
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Rooms

STANDARDS AND PRINCIPLES:-

- Rooms with long axis nearer north-south than the east- west are preferable
- the ventilation of the room should be from the short side "width" of the room
- **Rooms types:**

	Single	Double	Suite
Total	40 m^2	50 m^2	60 m^2
Area without bathrooms & corridors	15 m^2	20 m^2	15 m^2
Bathroom area	5 m^2	4.5 m^2	7.5 m^2
living room	-	-	15 m^2
Entrance hall	-	-	10 m^2

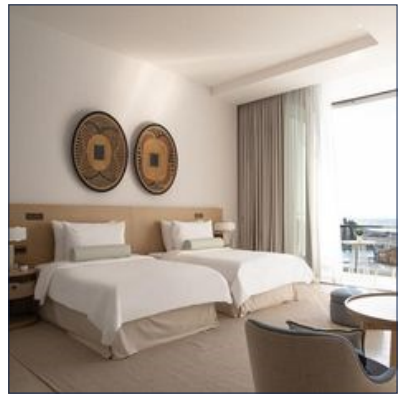
DESIGNING RATE:-

- 6-8 m^2/ person
- Corridor's width for single loaded 1.6:1.8 m
- Corridor's width for double loaded 1.8:2.4 m

FUNCTIONAL RELATIONSHIP:-

- rooms starts from the first floor

Single Room



Double Room

Suite Room

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- **Housekeeping**
- Kitchen
- Toilets
- Administration
- Circulations
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Housekeeping

STANDARDS AND PRINCIPLES:-

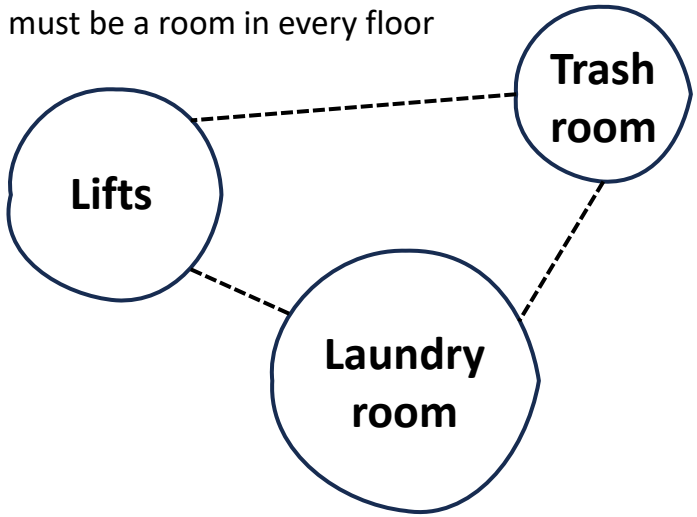
- Contain trash room in every floor
- Contain a laundry room in the last floor under the roof and its door opens directly on the corridor

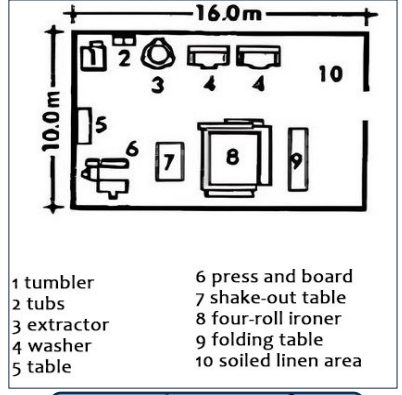
DESIGNING RATE:-

- room area vary from 7.5 m² to 9.5 m²
- trash room area 0.07 m²/ room
- laundry room area 1.40 m² for 100 rooms
- laundry room area 1.11 m² for 250 rooms

FUNCTIONAL RELATIONSHIP:-

- Should have a direct relationships with the services lift
- must be a room in every floor





1 tumbler
2 tubs
3 extractor
4 washer
5 table
6 press and board
7 shake-out table
8 four-roll ironer
9 folding table
10 soiled linen area

Laundry room for 200 bed room hotel

Laundry room

Trash room

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- **Kitchen**
- Toilets
- Administration
- Circulations
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Kitchen

STANDARDS AND PRINCIPLES:-

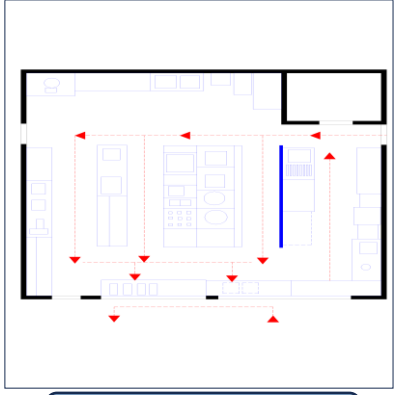
- Orientation of kitchens always directed to the
- Opposite direction of the wind
- the food court has a special entrance

DESIGNING RATE:-

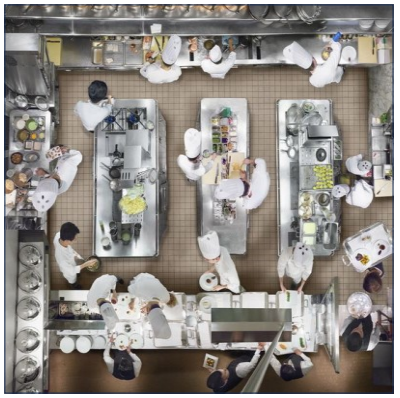
- Main kitchen 0.9-1.0 m²/ seat
- Restaurant kitchen 0.6 m²/ guest
- Coffee shop kitchen 0.6 m²/ seat
- Food storage 0.5 m²/ dinner
- Seating area 1.8 - 2.0 m²/ seat
- Lounge/ bar 1.8 - 2.0 m²/ seat
- Breakfast hall 0.4 m²/ guest

FUNCTIONAL RELATIONSHIP:-

- Routes between the kitchen, servery and dinning areas should be short as possible
- Must be in the ground floor
- Near to the Reception



Kitchen Circulation



Kitchen Circulation

Dinning Area

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CHAPTER 1
CHAPTER 2

CHAPTER 2

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- **Toilets**
- Administration
- Circulations
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

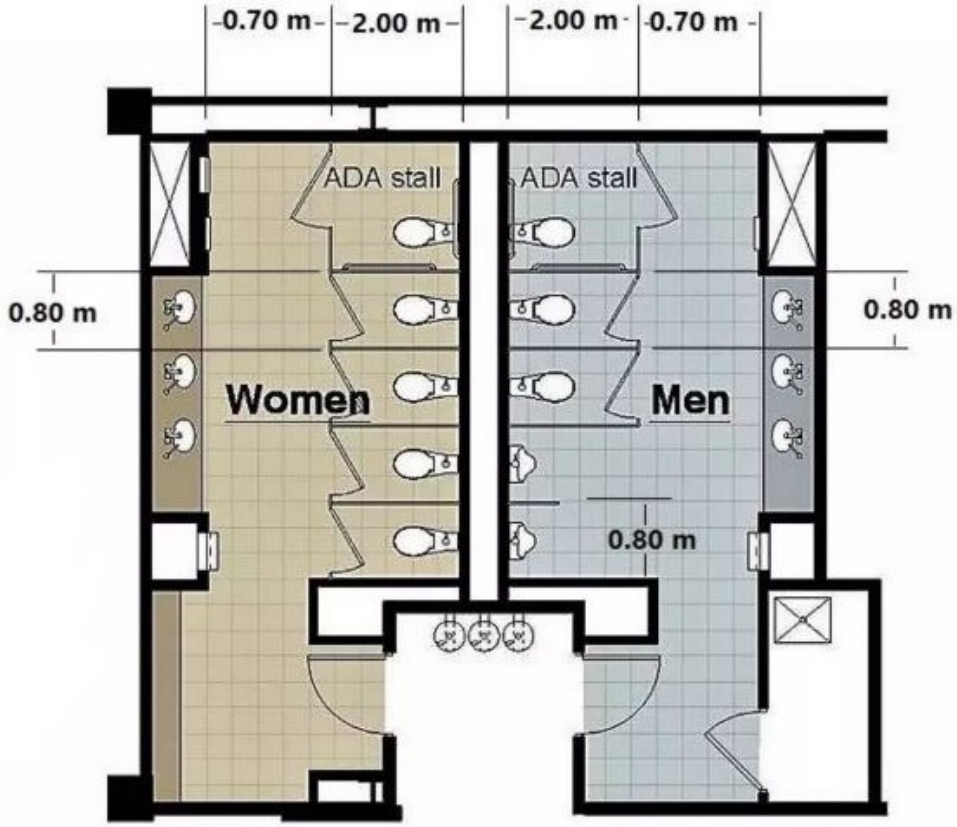
-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Toilets

DESIGNING RATE:-

- Every 80-100 men: 2 urinals, 1 toilet, 1 hand risen
- Every 100 women: 3 toilets, 1 hand risen
- Every 9 residential staff: 1 bathroom



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Toilets for women and men

Women Toilet

Men Toilet

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CHAPTER 1
CHAPTER 2

CHAPTER 2

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- **Administration**
- Circulations
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

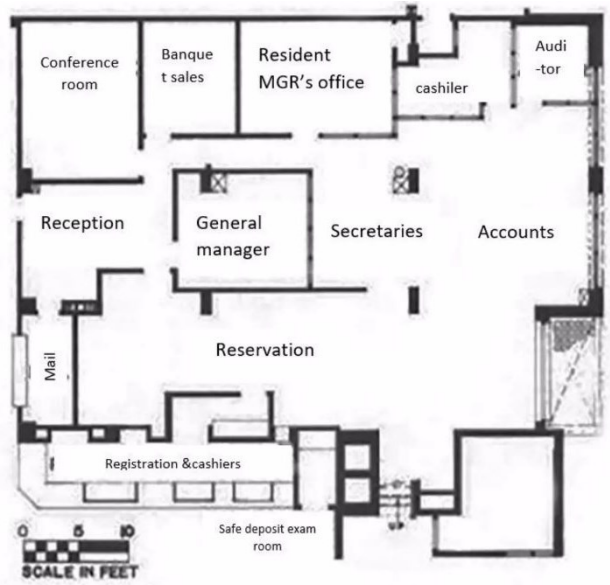
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Administration

DESIGNING RATE:-

	100 guest rooms	200 guest rooms
Manager	9.5-11.5 m^2	11.5-14.0 m^2
Assistant manger	7.5-9.5 m^2	9.5-11.5 m^2
Financial	not required	7.5-9.5 m^2
Secretaries	7.5-9.5 m^2	11.5-14.0 m^2
Sales & Catering	not required	11.5-14.0 m^2
General office	14.0-18.5 m^2	18.5-23.0 m^2

- 0.46 m^2 for 250 room



Example for the Administration department

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Manager room

Assistant Manager room

Meetings room

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- **Circulations**
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

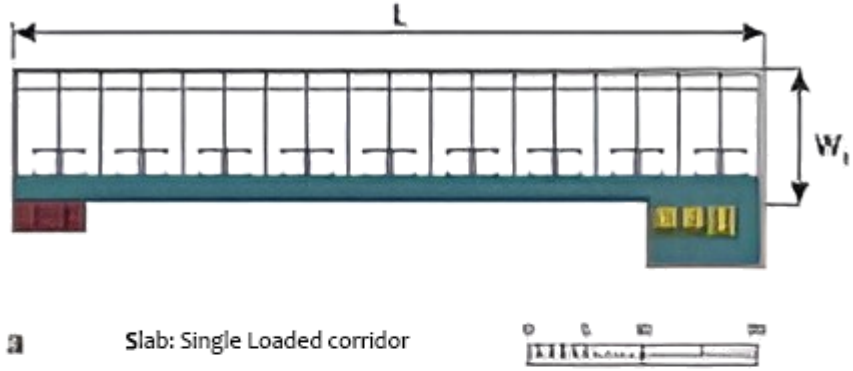
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Circulation

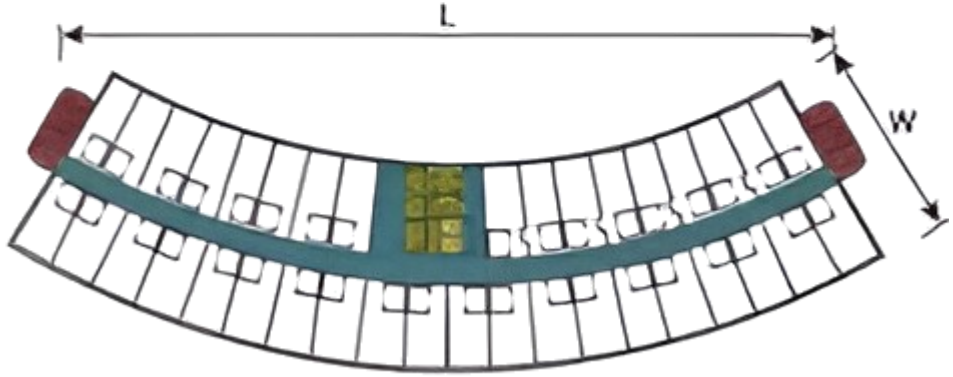
1) HORIZONTAL CIRCULATION

DESIGNING RATE:-

- Single loaded corridor 1.8 m²
- Double loaded 2.4 m²
- Minimum lobby 1 m²/ room
- Maximum travel distance to find a lobby is 25-30 m

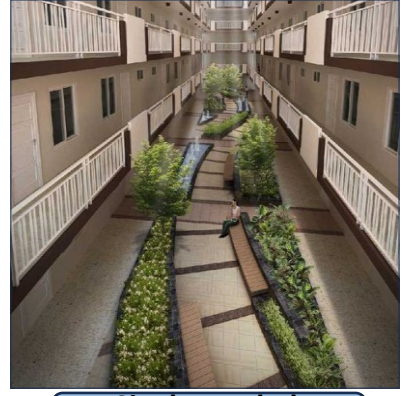


a Slab: Single Loaded corridor



b curved segmented slab

METRIC HANDBOOK PLANNING AND DESIGN DATA



Single Loaded Corridor

Double Loaded Corridor

Lobby in each floor

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- **Circulations**
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Circulation

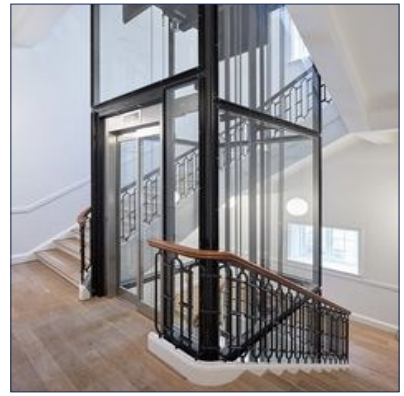
2) VERTICAL CIRCULATION

-LIFTS

	Public "guests"	Service "people & things"	Service "small goods & waiters
STANDARDS AND PRINCIPLES:-		using by staff for transferring furniture	connection between kitchen and room service
DESIGNING RATE:-	lift for each 150 bed	lift for each 200 bed	lift for each 150 bed
FUNCTIONAL RELATIONSHIP:-	• must be visible from reception desk • lifts lobby must not be less than 3 m for a row and 3.7 m for double rows		• connection between kitchen and room service

Public lift "Guests"

Service "people & things"



Service "Small goods & waiters"

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- **Circulations**
- Core
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

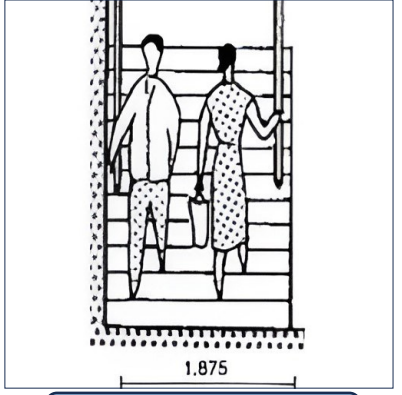
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Circulation

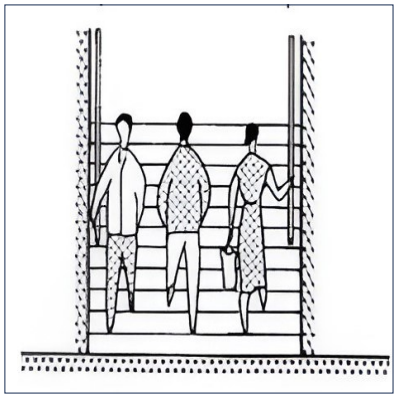
2) VERTICAL CIRCULATION

-STAIRS

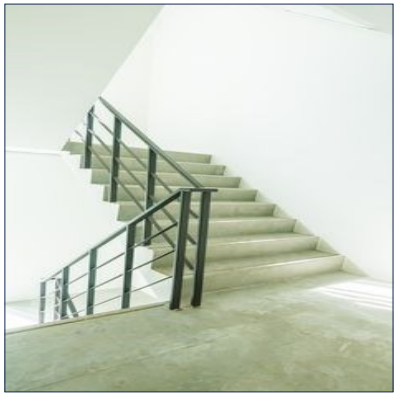
	Main stairs "public, goods, escape"	Escape stairs "emergency"
STANDARDS AND PRINCIPLES:-	• max. 16 steps between landings • min. 3 steps between landings	• Maximum travel distance is 30 m • Adding self closing door each 30 m
DESIGNING RATE:-	• stairs width: 1850 mm for 3 people, 1250 mm for 2 people • Handrail height 900 mm • landing width bigger/equal stairs width	• Exit width doors should be smaller/equal stairs width
FUNCTIONAL RELATIONSHIP:-	• Stairs should be near the lifts	



Stairs for 2 people



Stairs for 3 people



Escape stairs "emergency"

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- Circulations
- **Core**
- Stores
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Core

STANDARDS AND PRINCIPLES:-

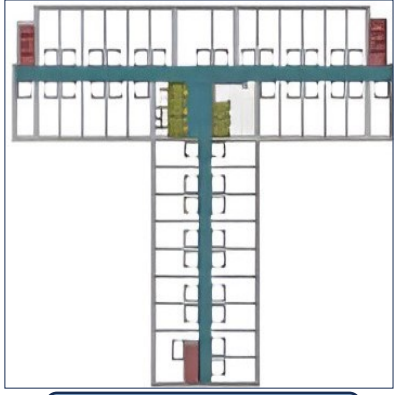
- The stolen floor is designed between the ground floor (reception) and the first floor (bedrooms).
- It consists of all kinds of stairs and all kinds of elevators
- Stairs: (escape stairs - service stairs - honorary stairs for visitors).

DESIGNING RATE:-

- The distance between the ladder and the door of any room shall not exceed 18 metres.
- Stairs and elevators are distributed so that no room is more than 18 meters away.
- The dead corner is used to place service rooms and service elevators.
- A hotel with 75 to 80 rooms or a low-rise building should have at least one elevator.
- If the number of rooms ranges from 100 to 150, it is recommended to have the ratio. For hotels with more than 200 rooms, it is necessary to set up 3 elevators.
- Core minimum area 13-15 % from floor area

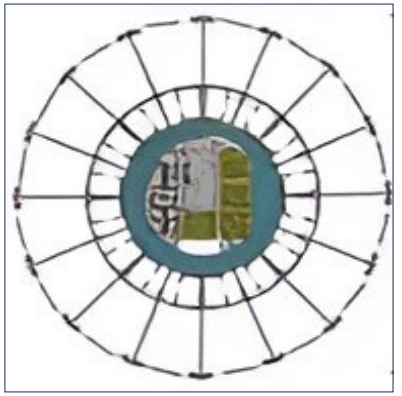
FUNCTIONAL RELATIONSHIP:-

- It contains all the drainage and all the connections, and it is connected to the outside without going down to the ground floor.



Core at T shape

Core at square shape



Core at circle shape

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- Circulations
- Core
- **Stores**
- Market
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Stores

STANDARDS AND PRINCIPLES:-

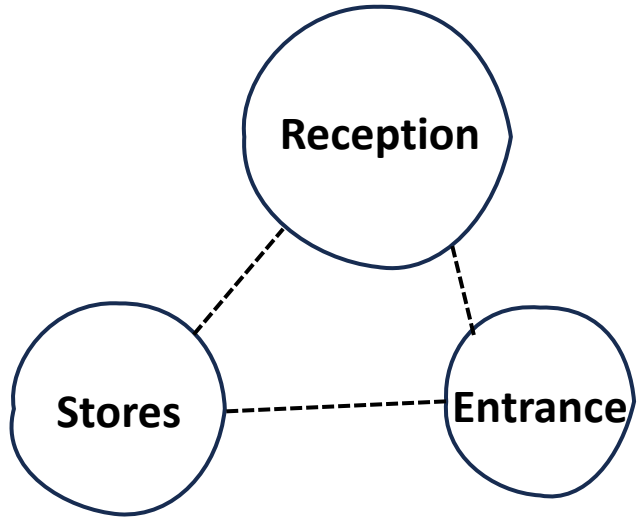
- Stores located in the ground floor.
- Stores must be visible from the reception hall easily.

DESIGNING RATE:-

- Hotel with 100 rooms 1.40m² / room
- Hotel with 250 rooms 1.11m² / room
- Hotel with 500 rooms 0.93m² / room
- Hotel with 1000 rooms 0.74m² / room

FUNCTIONAL RELATIONSHIP:-

- Should have a direct relationships with the Reception and the entrance



Motel stores

Motel stores

Motel stores

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- Circulations
- Core
- Stores
- **Market**
- ATM

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Market

STANDARDS AND PRINCIPLES:-

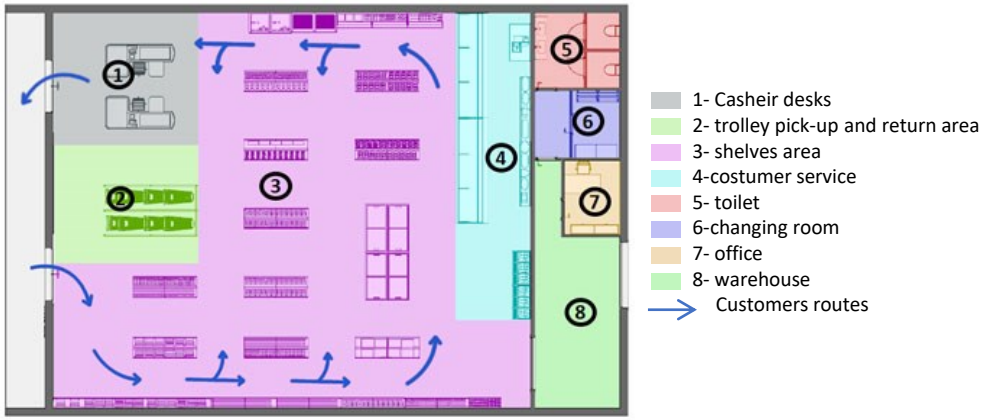
- The Market is found in the ground floor
- The Market an entrance from inside the hotel

DESIGNING RATE:-

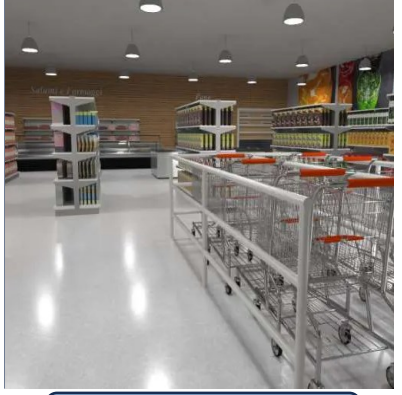
- Height of the market 2.7:3.0 m
- shopper walking in the aisle – 0.60 – 0.90 m
- shopper standing in front of shelves – 0.75 – 0.90 m
- shopper with trolley – 0.75 – 0.90 m
- refrigerator unit width – 1.40 m
- shelving width – 0.80 m

FUNCTIONAL RELATIONSHIP:-

- Should be near the lobby and the restaurants.



Example for the Market departments



Trolley area

Shelves area

Cashier area

https://biblus.accasoftware.com/en/how-to-design-a-supermarket-the-complete-technical-guide/

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

- Reception
- Rooms
- Housekeeping
- Kitchen
- Toilets
- Administration
- Circulations
- Core
- Stores
- Market
- **ATM**

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

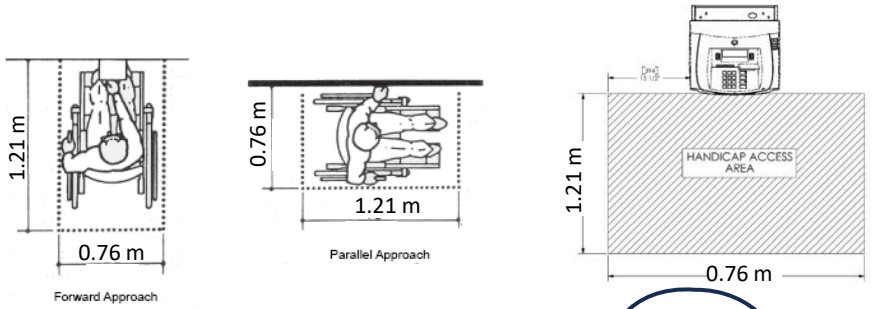
ATM

STANDARDS AND PRINCIPLES:-

- Stores located in the ground floor.
- Stores must be visible from the reception hall easily.
- Each bank has 2 ATM machines at least

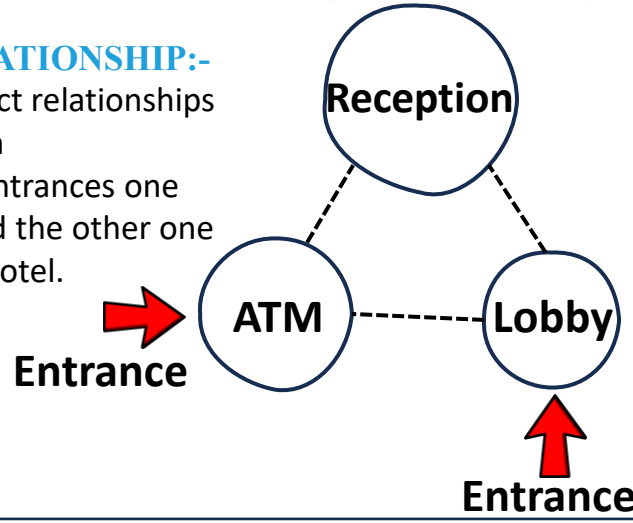
DESIGNING RATE:-

- ATM machine requires 0.30 m² of floor space
- For disabilities, The clear ground/floor space in front of the ATM at a minimum must measure 0.76 m by 1.21 m. The figure below is a helpful representation of space needed for access.

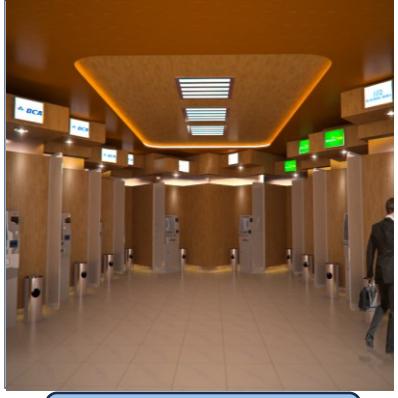


FUNCTIONAL RELATIONSHIP:-

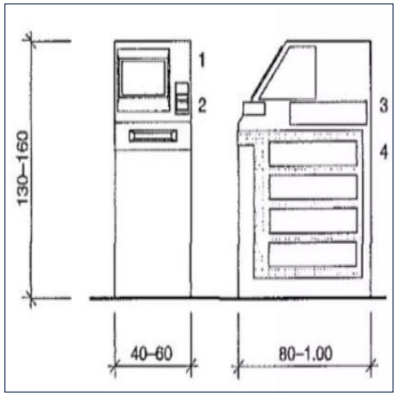
- Should have a direct relationships with the Reception
- ATM room has 2 entrances one from the lobby and the other one from outside the hotel.



prineta.com/atm-space-requirements



ATM Center



ATM Dimensions

ATM Machine

BA'RA HOTEL PLANB ARQUITECTOS

HOTELS JOÃO PESSOA, BRAZIL
Architects: Planb Arquitectos
Area: 6197 m²
Year: 2022
Photographs : Alejandro Arango

Lead Architects : Felipe Mesa, Federico Mesa

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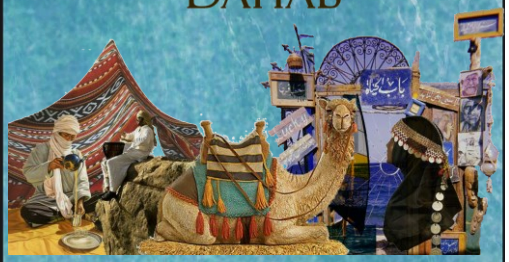
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

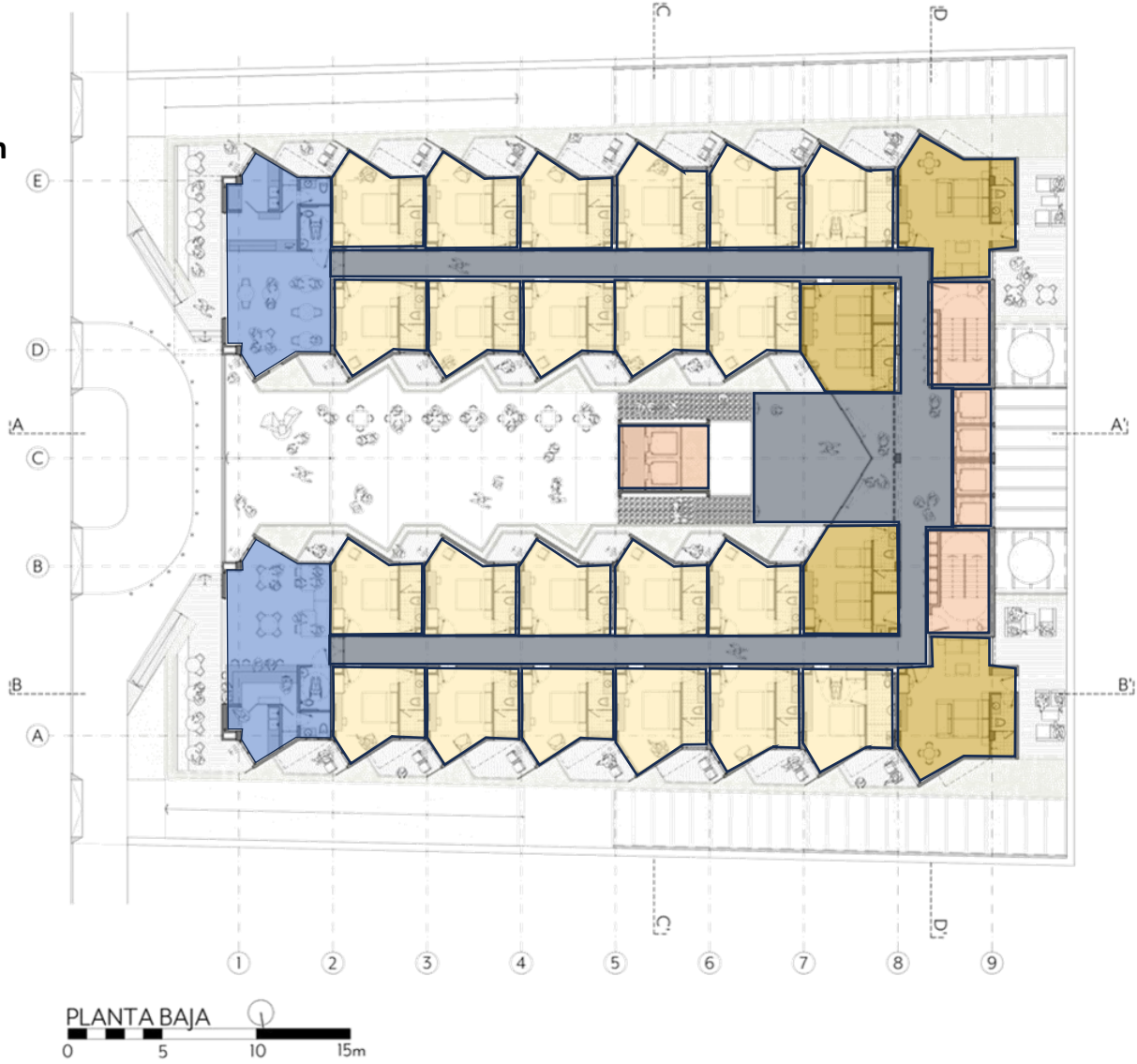
-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Ground Floor

- Single bedroom
- Double bedroom
- Restaurants
- Stairs & Lifts
- Circulation



PLANTA BAJA
0 5 10 15m

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

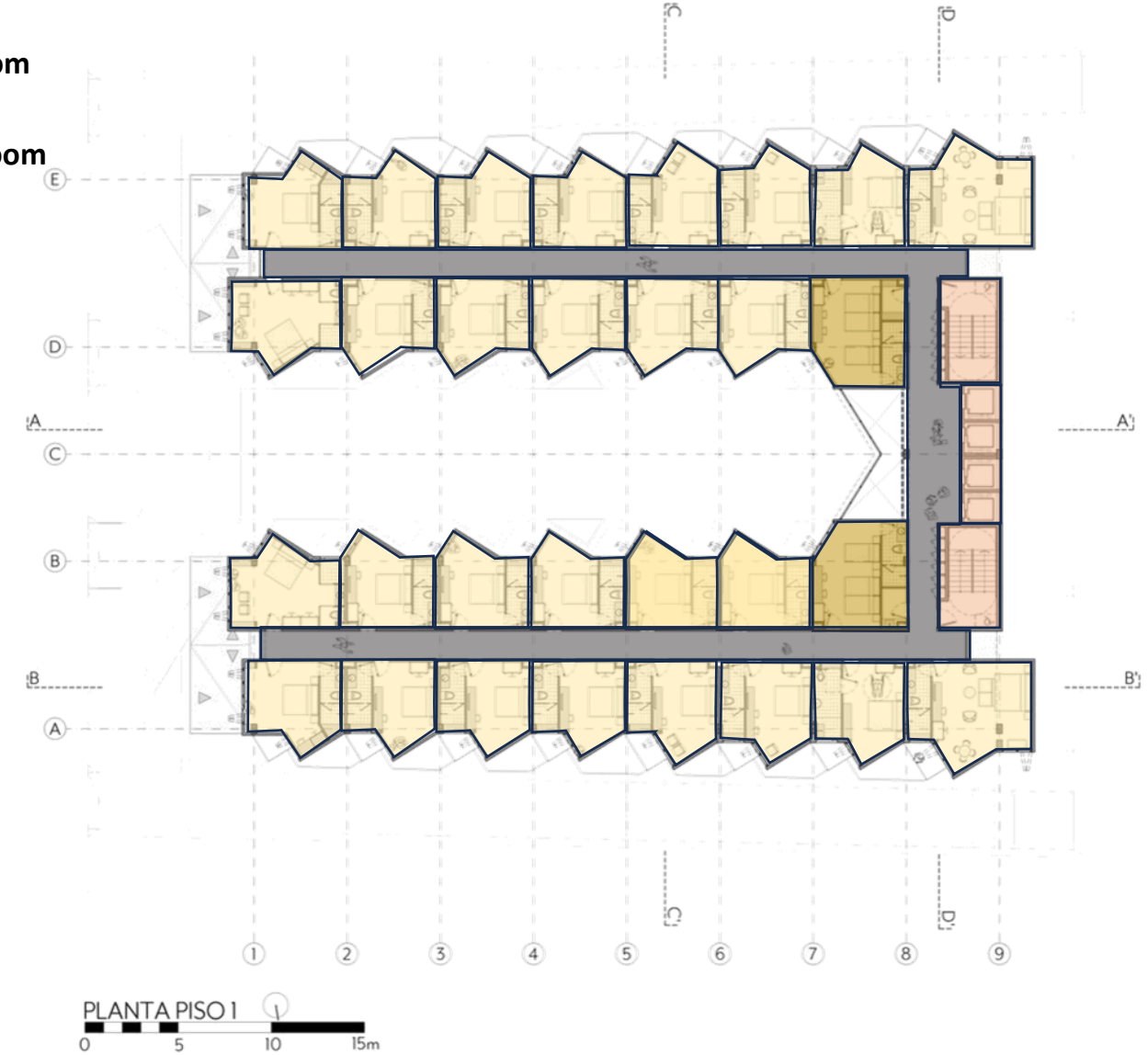
MOTEL

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Typical Floor

- Single bedroom
- Double bedroom
- Stairs & Lifts
- Circulation



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WSH - TUNIS

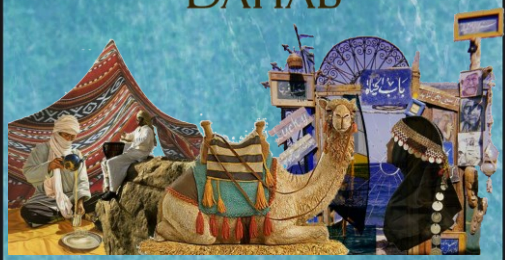
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

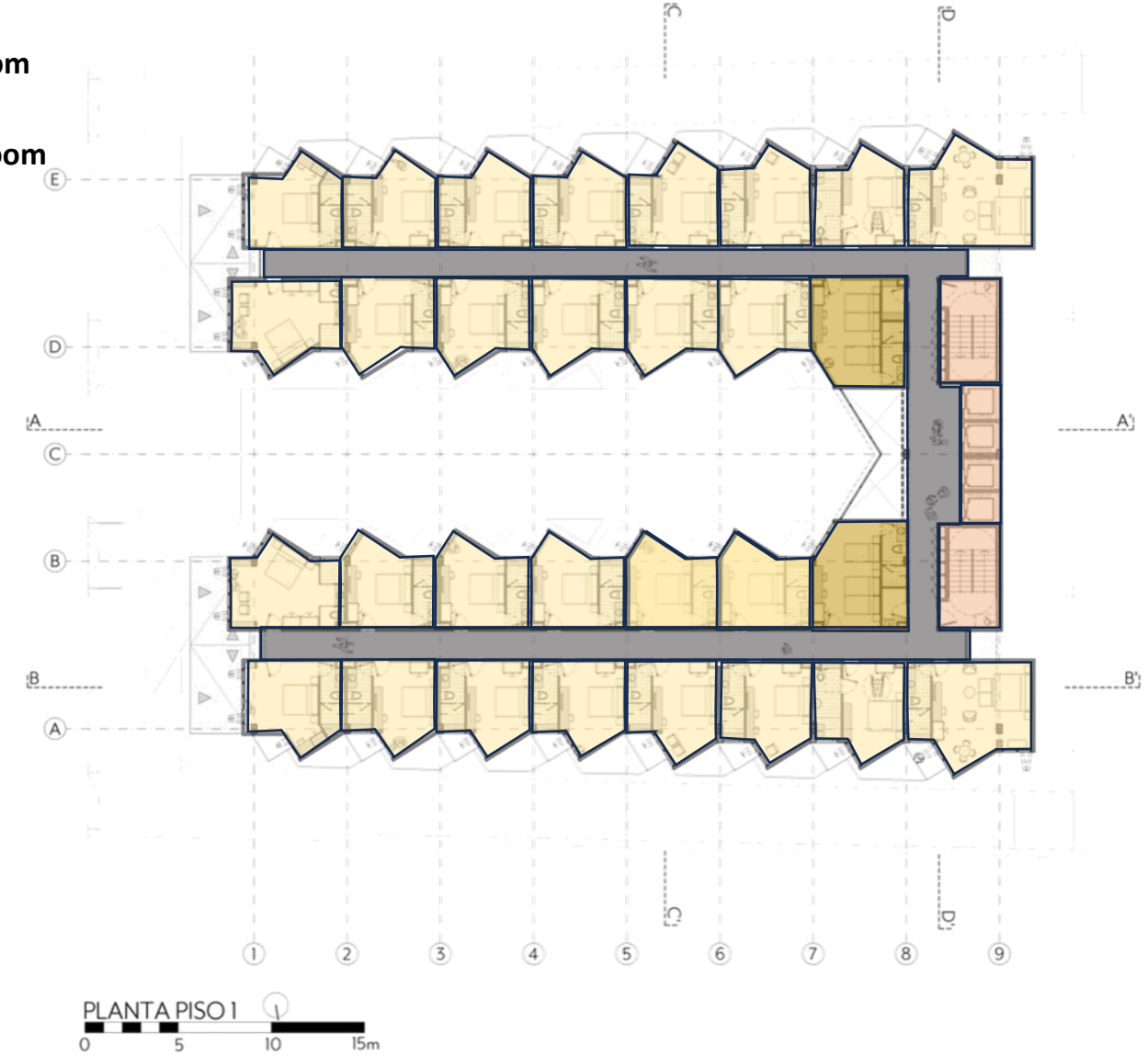
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7



Roof Floor

- Single bedroom
- Double bedroom
- Restaurants
- Stairs & Lifts
- Pool
- Circulation



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WSH - TUNIS

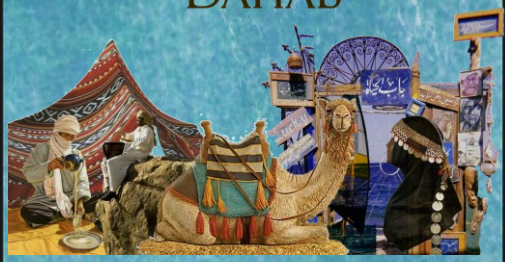
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

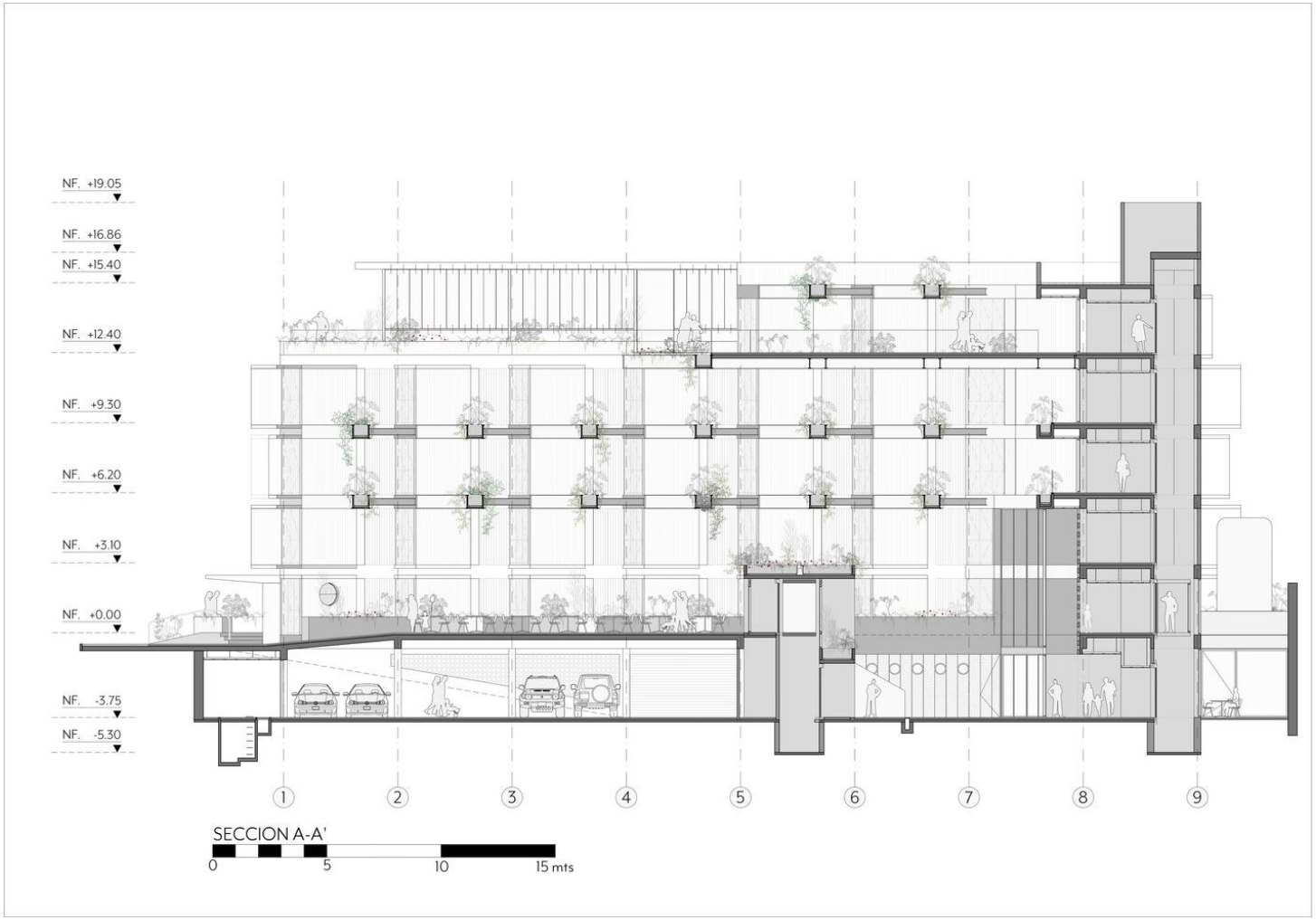
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Section A-A



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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

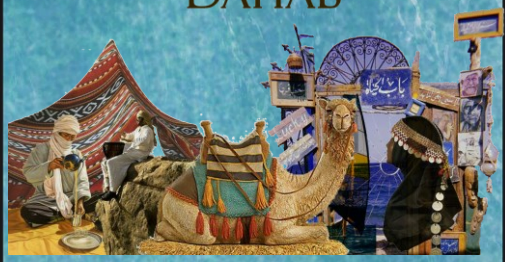
-Designing Rates and Standards

MOTEL

SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Section B-B

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
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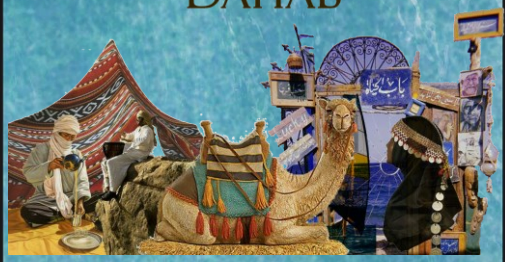
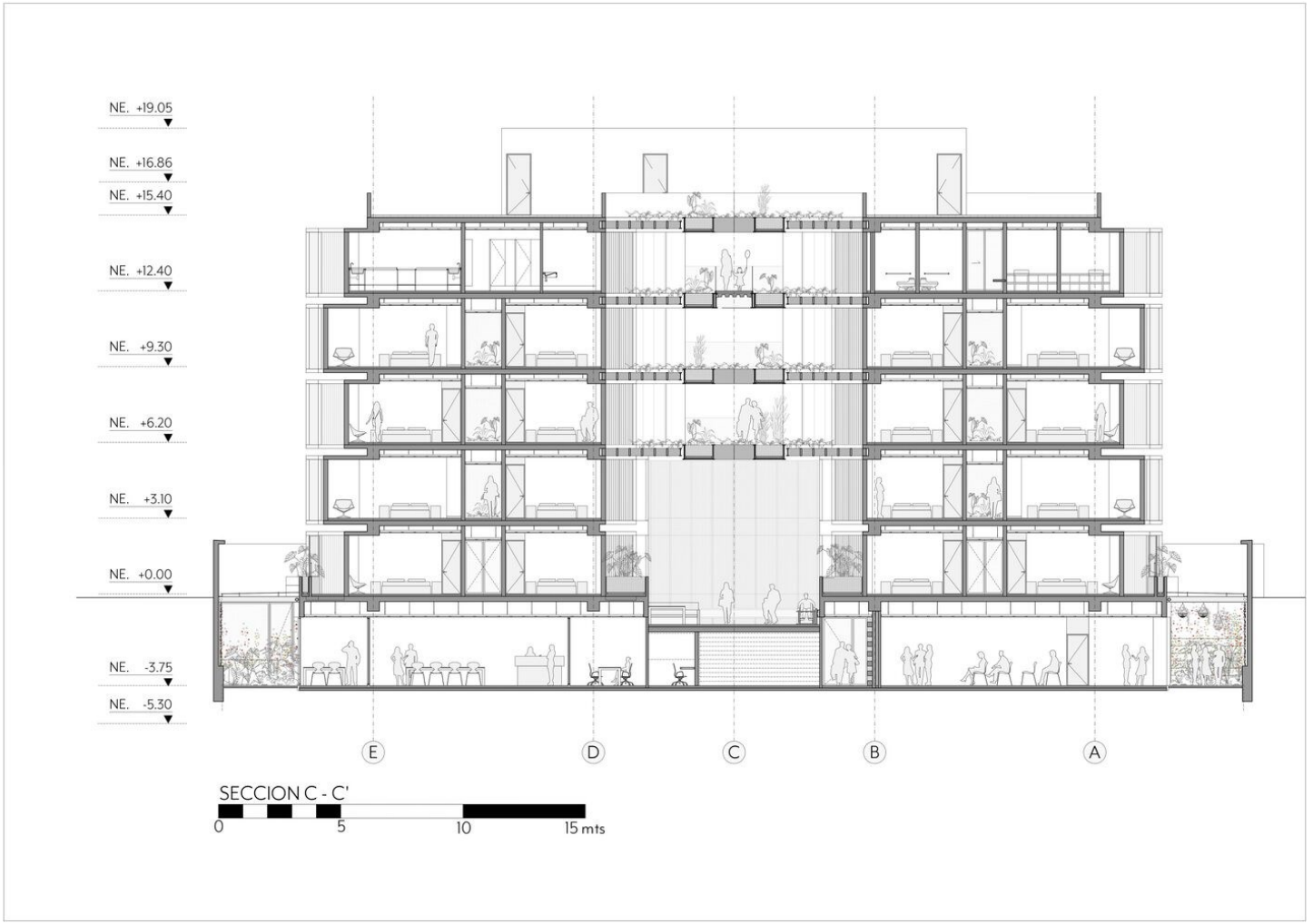


Section C-C



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Integrated Thebes Institutes

وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

دهب
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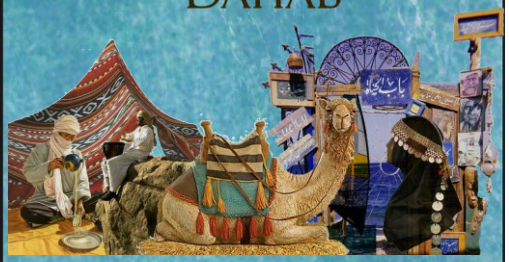
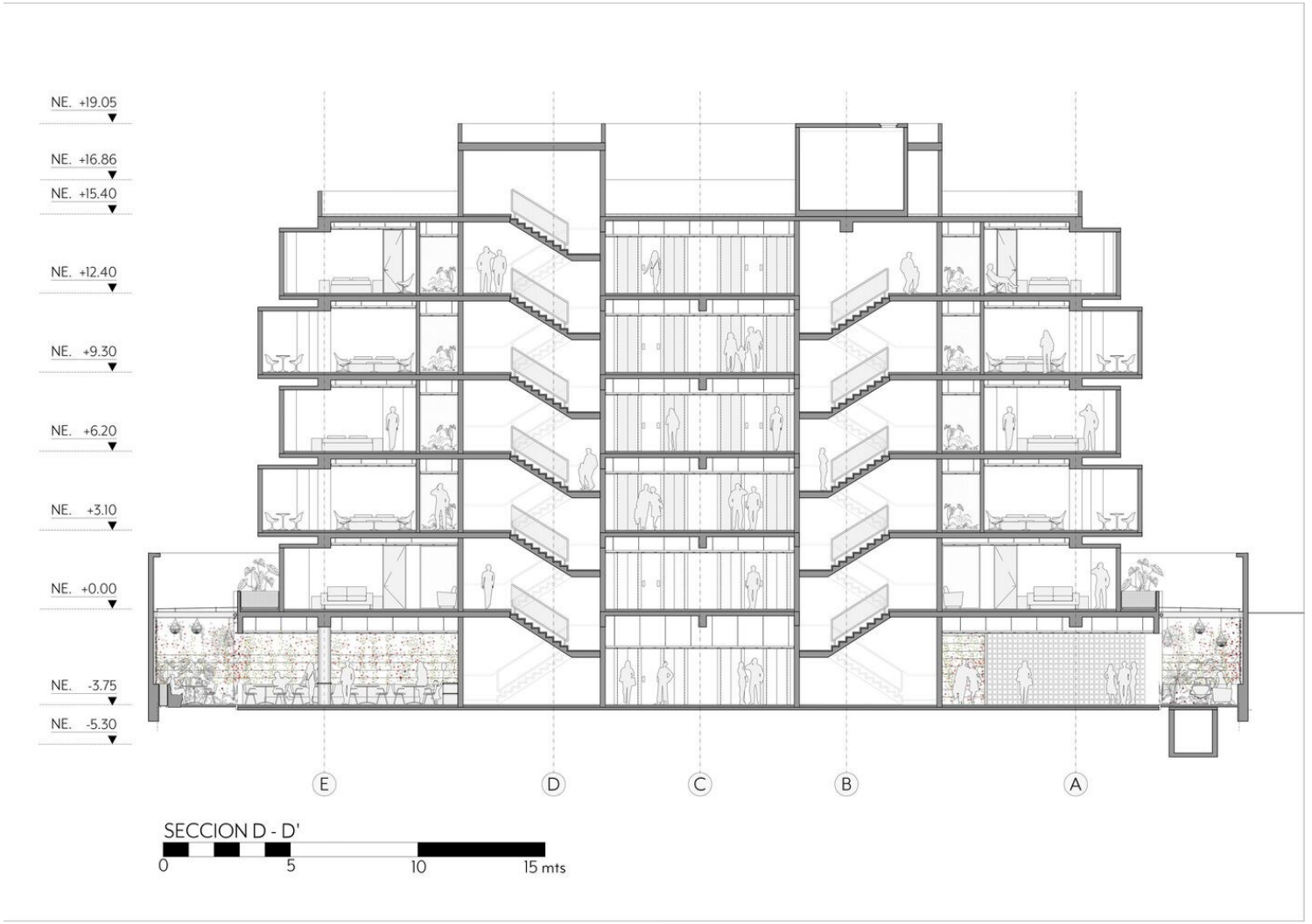


Section D-D



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Capella Sydney Hotel

HOTELS, RENOVATION, HOTELS INTERIORS.
SYDNEY, AUSTRALIA
Architects: BAR Studio
Area: 18524 m²
Year: 2023
Photographs : Tim Kaye, Judy Watson

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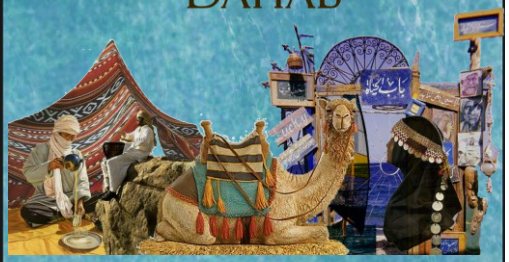
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

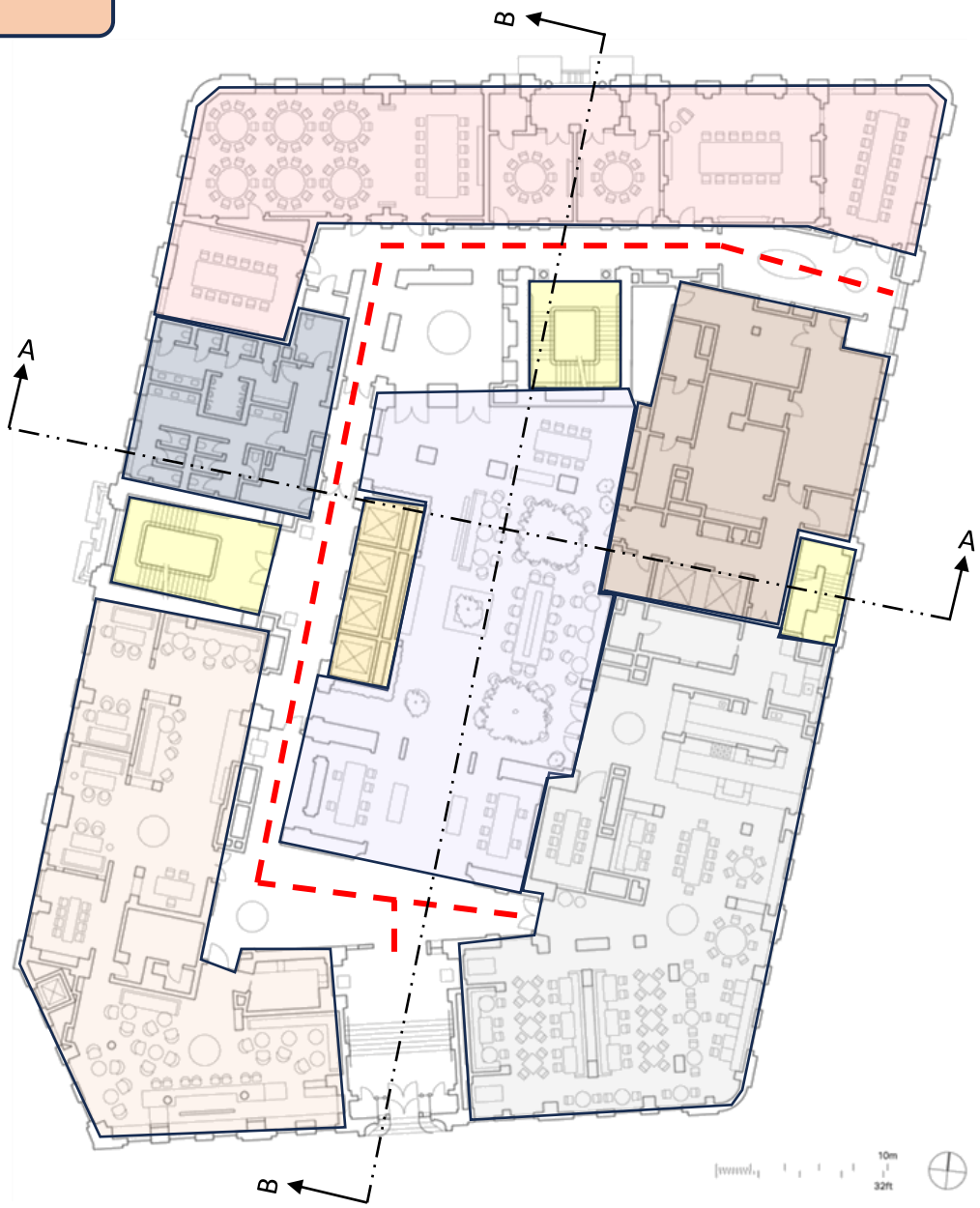
-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Ground Floor

- Toilets
- Meetings rooms
- Administration
- Restaurant
- Bar & Cafe
- Open space area
- Lifts
- Stairs



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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
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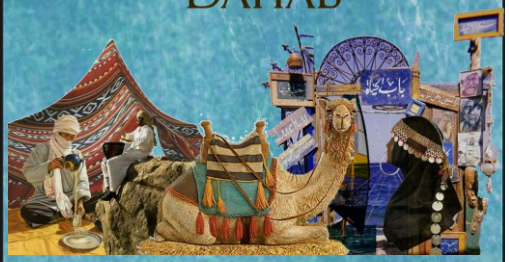
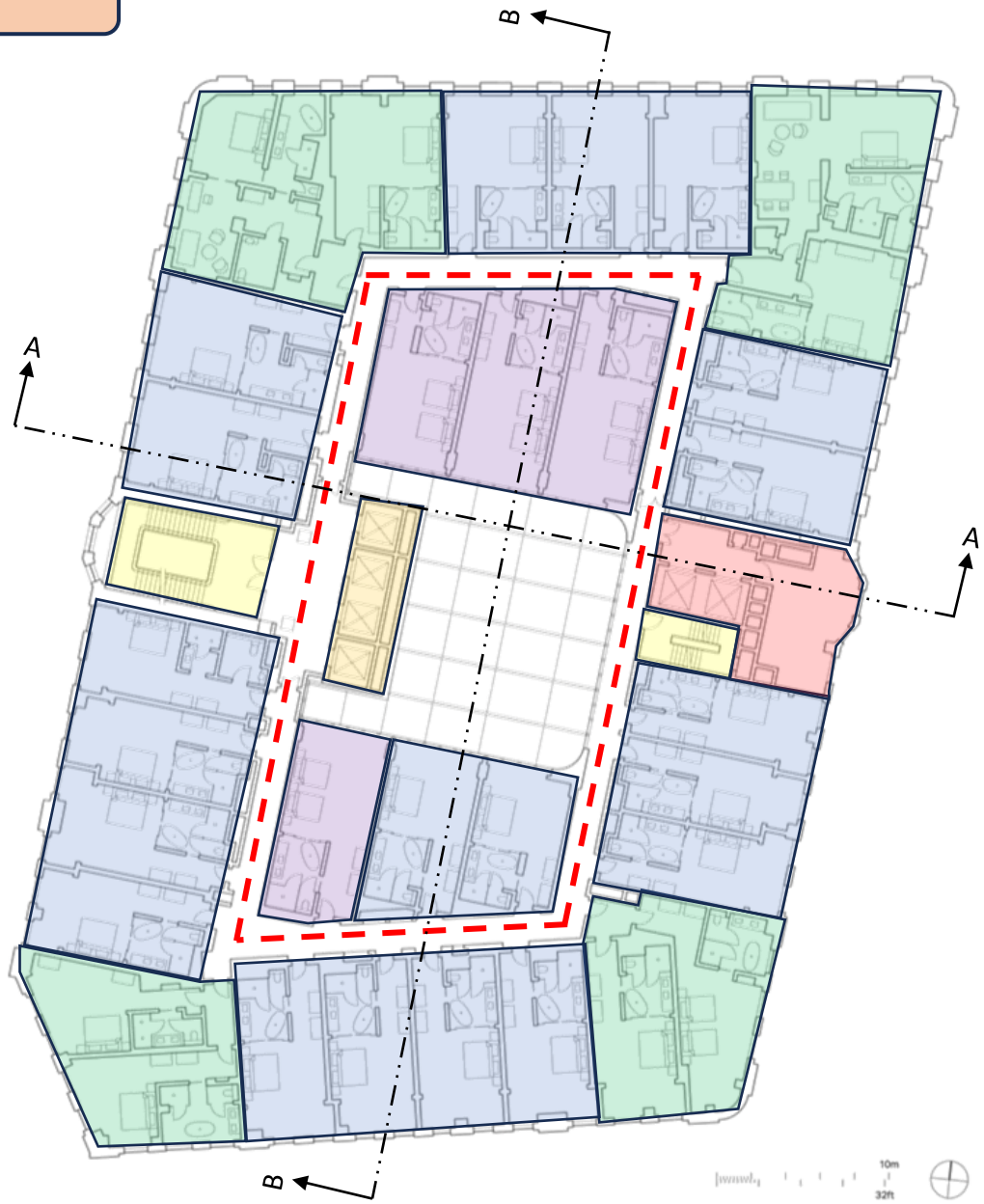


Second Floor

- Apartment
- Single room
- double room
- Service room
- Lifts
- Stairs



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WSH - TUNIS

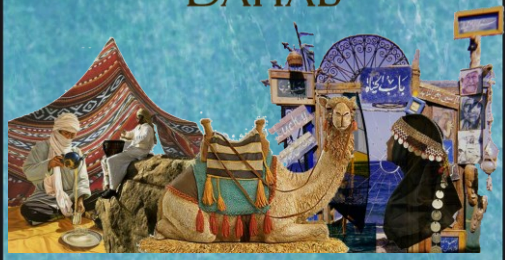
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

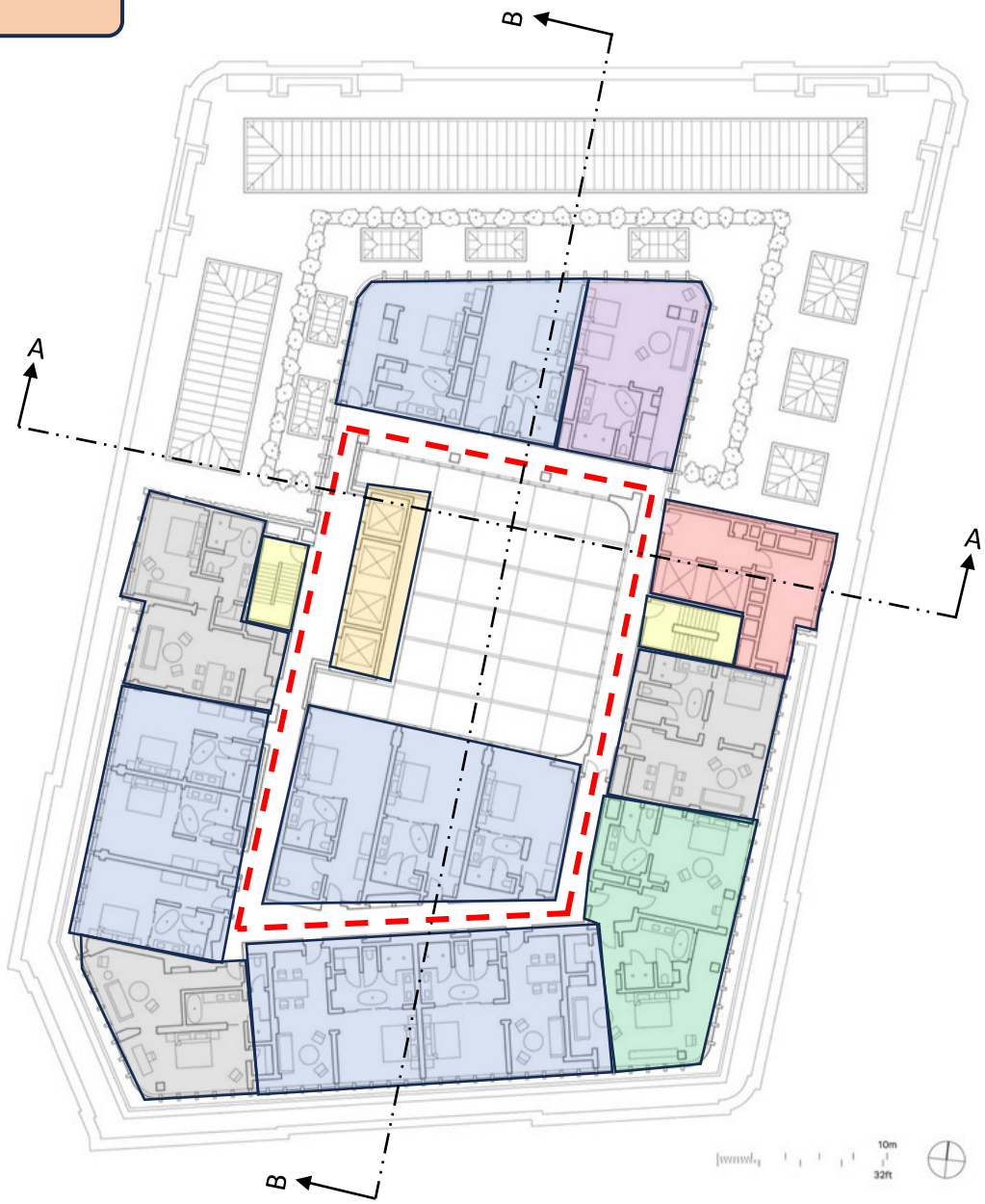
-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

دهب
DAHAB



Seventh Floor

- Suite
- Apartment`
- Single room
- double room
- Service room
- Lifts
- Stairs



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وش تونس
WSH - TUNIS

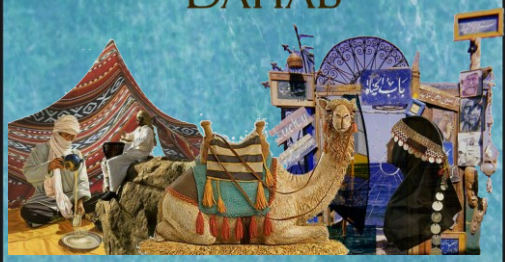
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

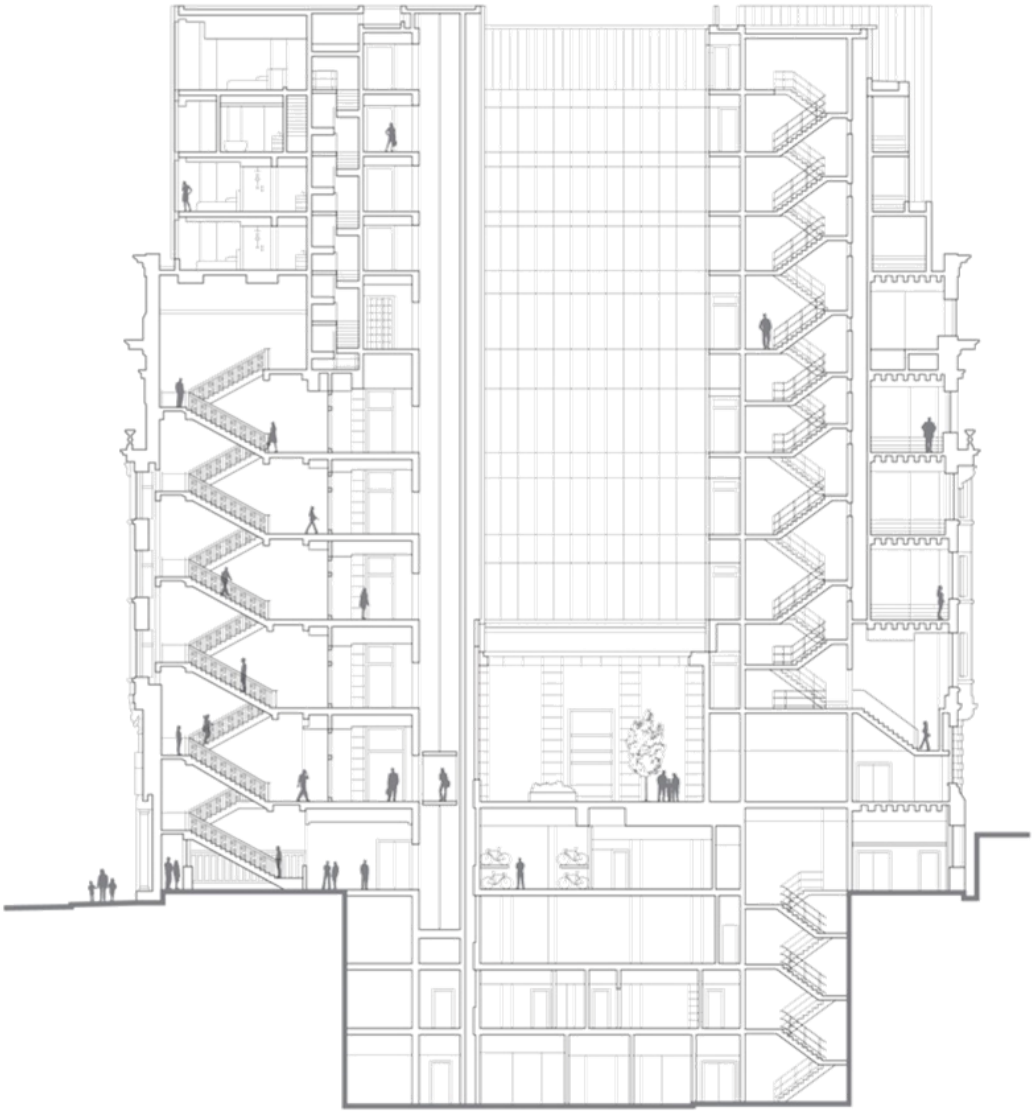
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



SECTION A-A



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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

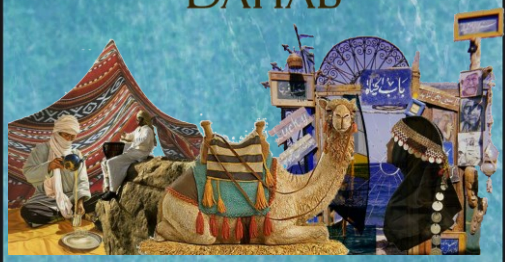
-Designing Rates and Standards

MOTEL

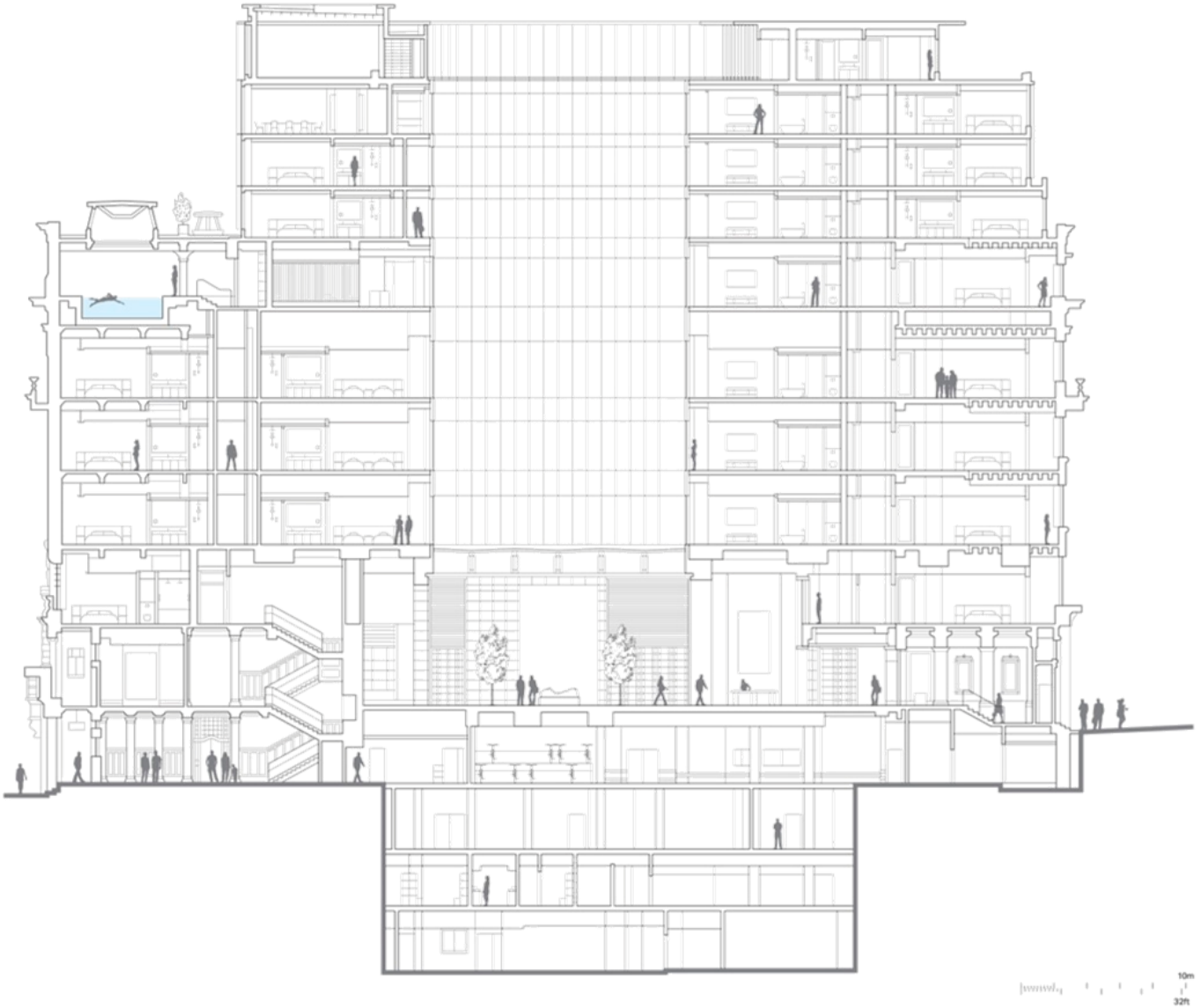
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



SECTION B-B



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SERVICES
Designing Rates and Standards

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

SERVICES

- **GYM & Health center**
- Bar
- Spa & Jacuzzi
- Shower & Lockers

CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

GYM & Health center

STANDARDS AND PRINCIPLES:-

- for medical services it must have a natural ventilation

DESIGNING RATE:-

- Swimming pool 15.0*7.0*1.4 m +2m surround +changing rooms
- Swimming pool 1.85 m²/ person
- Swimming pool depth 0.9 : 2.0 m
- Gymnasium 15 m² for a small fitness room to 65 m² for a large complex
- medical services minimum area 20-30 m²

Relationship between the pool and the gym

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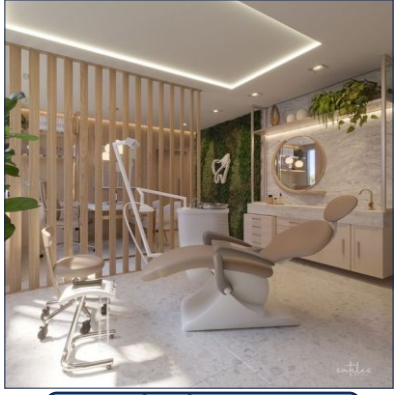
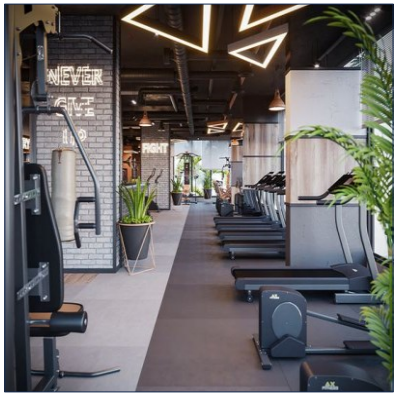


Medical services "clinic"

Swimming pool



Gymnasium

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES

- GYM & Health center
- **Bar**
- Spa & Jacuzzi
- Shower & Lockers

CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Bar

STANDARDS AND PRINCIPLES:-

- A swim-up bar includes two parts: wet side and a dry side.

1- The wet area includes any number of barstools that are submerged in the water. In most cases, it is best to build these in a shallow area that is between 0.70 and 1.06 meters deep.

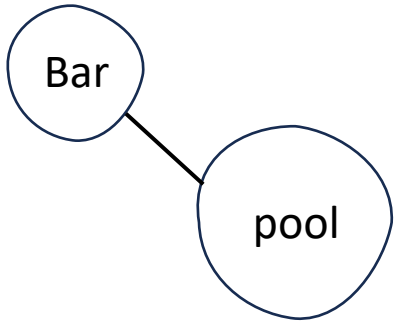
2- The dry side of the swim-up bar can include as many or as few features as you would like. A full outdoor kitchen with a refrigerator, barbeque grill, and other amenities helps make serving easy.

DESIGNING RATE:-

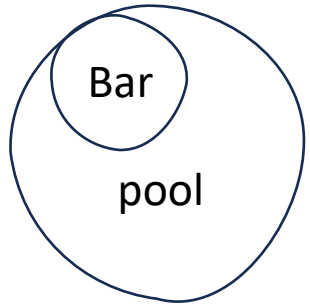
- Swim-up bars are placed in shallow areas with 0.70 and 1.06 meters of water
- Swim-up bar counter 0.15 meter above the pool's coping.

FUNCTIONAL RELATIONSHIP:-

- pool bar should be the nearest to the pool
- bar must be visible for the users easily.

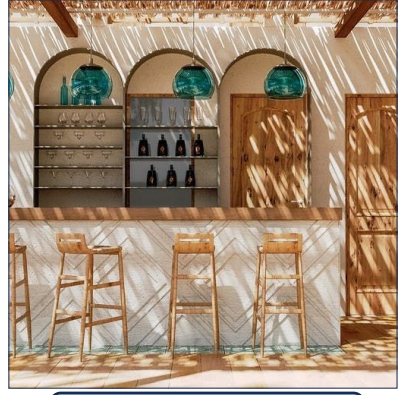


Relationship between the pool and the dry side bar



Relationship between the pool and the wet side bar

https://poolsbydesignaz.com/blog/benefits-of-a-swim-up-bar



Dry side bar

Dry side bar

Wet side bar

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL

SERVICES

- GYM & Health center
- Bar
- **Spa & Jacuzzi**
- Shower & Lockers

CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Spa and Jacuzzi

1- Spa

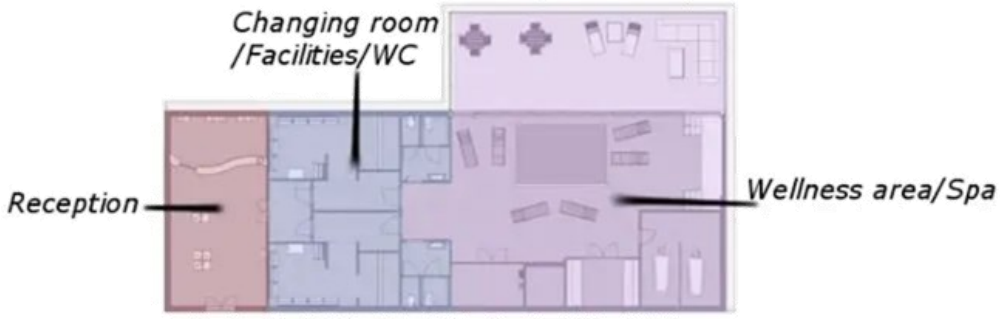
STANDARDS AND PRINCIPLES:-

- in the first area there are reception and sales area
- in the second area there are separate changing rooms, corridors, showers and toilets
- in the third area there are Spa

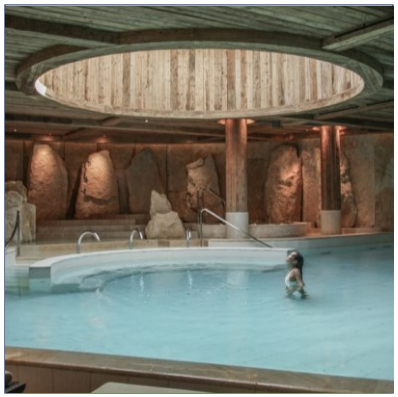
DESIGNING RATE:-

- Rooms with constant height ≥ 2,70 m
- Hygiene services rooms ≥ 2,40 m
- Hallways height ≥ 2,10 m
- Surface for ventilation ≥ 1/10 floor area
- Minimum room area ((where for room it is intended the space delimited by full-height wall) ≥ 9,00 m²
- Service room that envisages a single employee should be at least 15 m² and it will increase of 5 m² for each additional employee
- Facility floors must have a homogenous and washable surface
- Walls must be covered with a smooth and easily washable material up to 2.00 m

FUNCTIONAL RELATIONSHIP:-



Spa



Spa

Spa

https://biblus.accasoftware.com/en/how-to-design-a-wellness-centre-and-spa-the-complete-technical-guide/

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
- GYM & Health center
- Bar
- **Spa & Jacuzzi**
- Shower & Lockers

CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Spa and Jacuzzi

1- Jacuzzi

STANDARDS AND PRINCIPLES:-

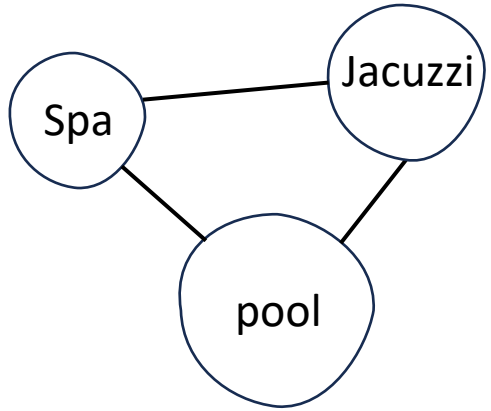
- Jacuzzi should be near the spa and the pool.

DESIGNING RATE:-

- The depth of the Jacuzzi tub is 90cm water depth. 50cm for upper bench part and 40cm for the lower part creating or simulating normal seat use.
- In designing a Jacuzzi we should allow 80cm distance space between bathers. Also, consider a way in through stairs or through a ladder.
- A corner bath's normal proportions are 1.5 m * 1.5 m, with a water depth of 0.5 m.

FUNCTIONAL RELATIONSHIP:-

- Should have a direct relationships with the pool, spa and shower & lockers



https://www.nobroker.in/forum/jacuzzi-standard

Jacuzzi

Jacuzzi

Jacuzzi

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
- GYM & Health center
- Bar
- Spa & Jacuzzi
- **Shower & Lockers**

CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Shower and lockers

STANDARDS AND PRINCIPLES:-

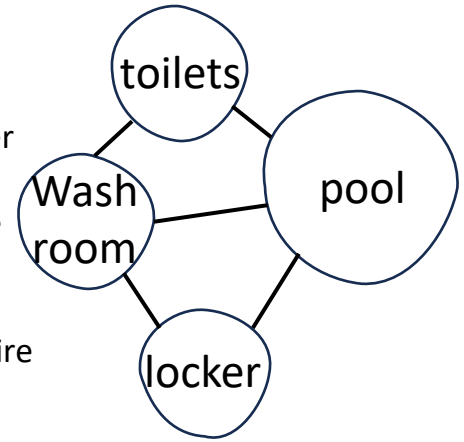
- The number of showers provided in both male and female dressing rooms shall be one for each 40 users or part thereof calculated on the maximum swimmer load, except that the minimum number of showers in each dressing room shall be two.
- All indoor pool facilities shall be provided with a suitable ventilation system.
- The pool shall be completely surrounded by a fence or wall that is at least 1.8 metres in height

DESIGNING RATE:-

- Dressing rooms for each sex shall have a minimum floor space of not less than 12.5 square metres.
- Washroom, For each 50 males,As minimum there shall be 1 water closet or 1 urinal and 1 handbasin.
- Washroom, For each 50 females, there shall be 1 water closet and 1 handbasin

FUNCTIONAL RELATIONSHIP:-

- All showers shall be located in such a manner that the swimmer shall pass by or through the shower area before entering the pool area.
- Access to the washroom for gallery spectators shall not require a spectator to pass through the dressing rooms



Lockers

Showers

Toilets

CRAFTS CENTER

Designing Rates and Standards

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL SERVICES

CRARTS CENTER

- **Exhibition room**
- Workshop rooms
- MPU
- Administration
- Services

COMMERCIAL HERITAGE WATER TRAINING CENTER

-Planning Rates and Standards

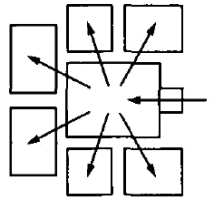
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Exhibition room

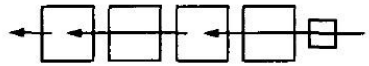
STANDARDS AND PRINCIPLES:-

The storyline of an exhibition may be translated into:

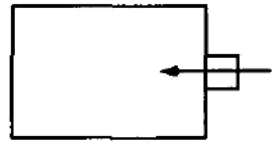
- A linear arrangement of spaces with beginning, middle and end



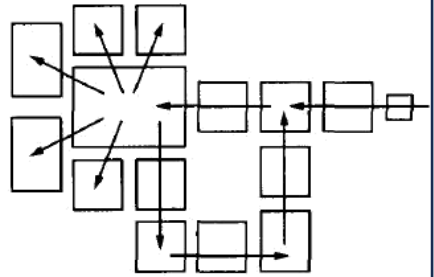
- A loop where the essentially linear storyline leads naturally back to the beginning



- An arrangement of core and satellites where each theme or detailed treatment of a subject leads back to a central introductory or orientational area



- A more complex scheme combining linear, loop and core–satellite arrangement of spaces which is specifically structured to account for more or less stable relationships between collections and interpretive themes



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Exhibition room

Exhibition room

Exhibition room

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
- **Exhibition room**
- Workshop rooms
- MPU
- Administration
- Services

COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

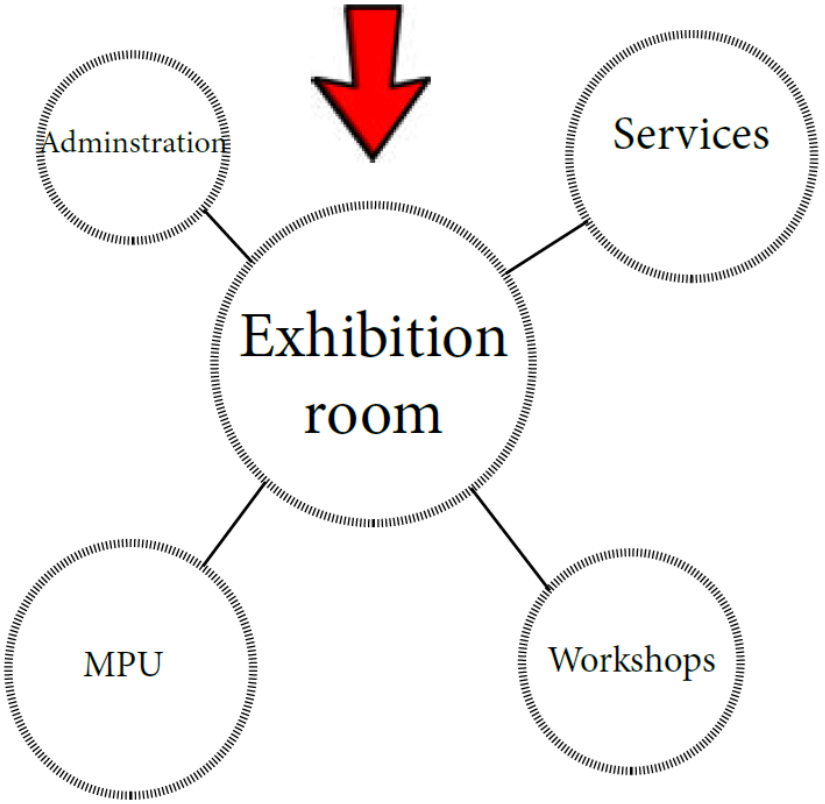
Exhibition room

DESIGNING RATE:-

- Minimum exhibition area 55 m².

FUNCTIONAL RELATIONSHIP:-

- Should have a direct relationships with the services and the entrance.



Exhibition room

Exhibition room

Exhibition room

METRIC HANDBOOK PLANNING AND DESIGN DATA

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Integrated Thebes Institutes

وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
- Exhibition room
- **Workshop rooms**
- MPU
- Administration
- Services

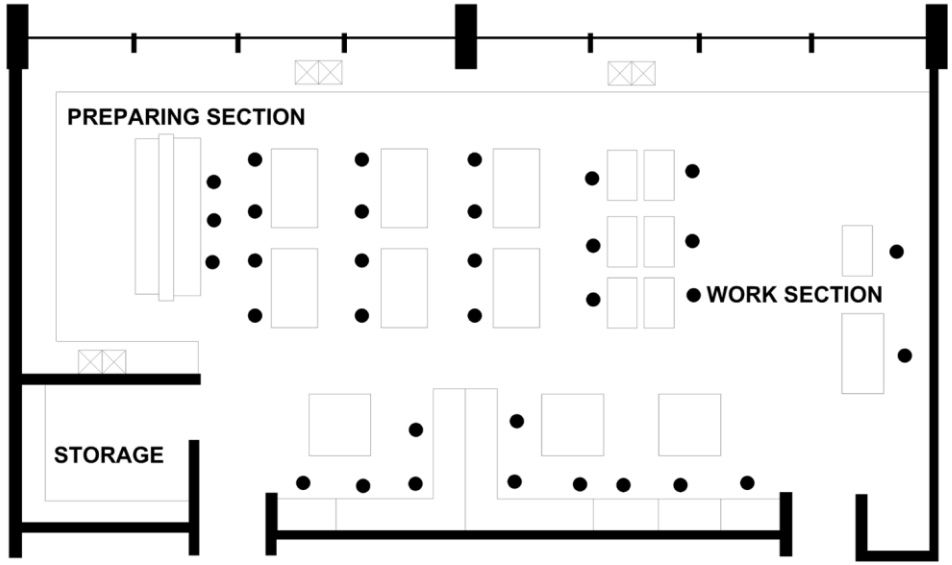
COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Workshops

STANDARDS AND PRINCIPLES:-

- Workshop room contains a storage room and a Preparation section and work section

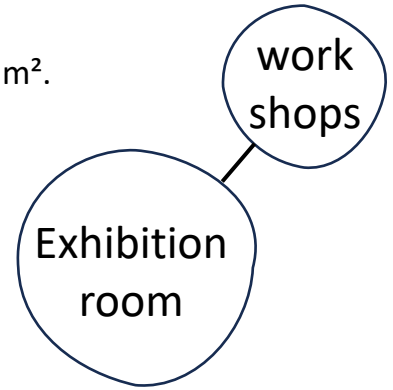


DESIGNING RATE:-

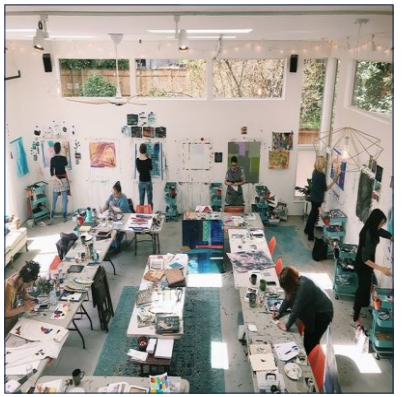
- Minimum work section area 100 m².
- Minimum preparing section area 30 m².
- Minimum storage area 20 m².

FUNCTIONAL RELATIONSHIP:-

- Should have a direct relationships with the exhibition area.



Workshop room



Workshop room

Workshop room

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL
SERVICES
CRARTS CENTER

- Exhibition room
- Workshop rooms
- **MPU**
- Administration
- Services

COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

MPU

STANDARDS AND PRINCIPLES:-

Ceiling:-

- Too many crackers help to distract sound instead of grouping it in one place.
- Concave ceilings should be kept away from due to acoustic focus
- The ceiling should not be smooth and parallel to the floor because if the floor is also soft, the static waves will continue to reverberate between the two surfaces for a long time, which creates a sound echo.

Walls:-

- The back walls of the halls should be straight, not concave
- The walls of the hall are completely solid, stuffed with soundproofing materials and covered with dispersive or sound absorbing materials

Ventilation:-

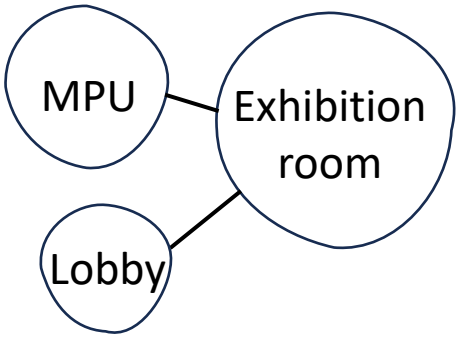
- In the process of ventilation inside the hall, the air inlet is from the ceiling and side walls, while the air outlet is from under the spectator seats.

Spaces attached to the hall:-

1- Hall entrance hall

- The audience must exit the hall to a discharge hall that is adequate for the number of attendees to accommodate them.

2- Cafeteria



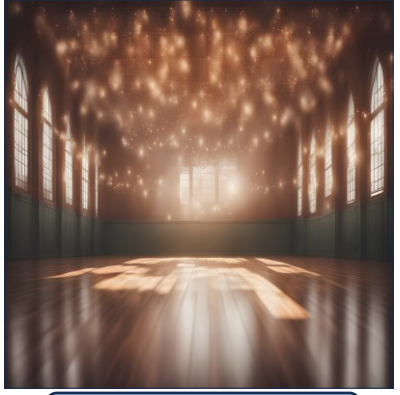
DESIGNING RATE:-

- Design rate 0.8 m²/ seat
- Entrance hall requires 1m²/ seat

FUNCTIONAL RELATIONSHIP:-

- Cafeteria Preferably connected to the main lobby of the hall and exhibition room.

www.eng2all.com



MPU Hall

MPU Hall

MPU Hall

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
- Exhibition **room**
- Workshop rooms
- MPU
- **Administration**
- Services

COMMERCIAL HERITAGE
WATER TRAINING CENTER

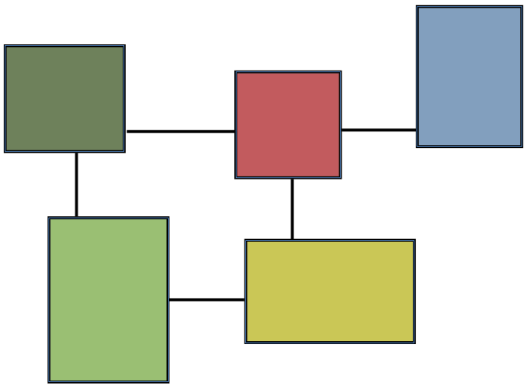
-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Administration

STANDARDS AND PRINCIPLES:-

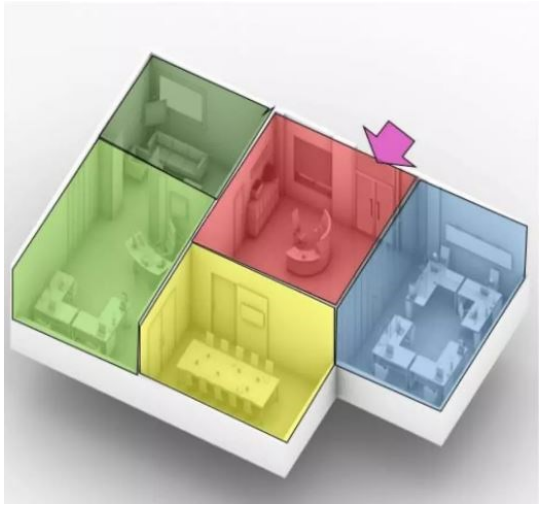
Contains:

- Manager room
- Secretary room
- Meeting room
- Offices
- Waiting room



DESIGNING RATE:-

- Manager room 20-30 m²
- Secretary room 15-20 m²
- Meeting room 2.5 m²/ employee, minimum area 28 m²
- Offices room 2.5 m²/ employee



Manager room

Secretary room

Meeting room

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards

MOTEL
SERVICES
CRARTS CENTER

- Exhibition **room**
- Workshop rooms
- MPU
- Administration
- **Services**

COMMERCIAL HERITAGE
WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Services

STANDARDS AND PRINCIPLES:-

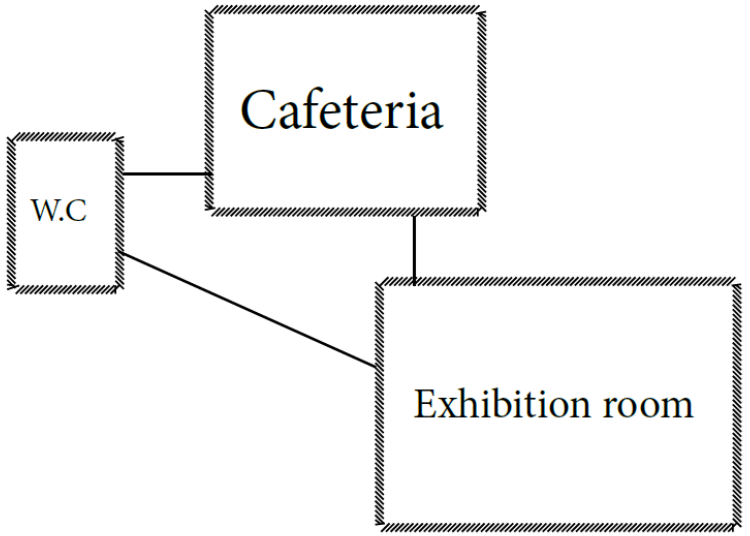
- Contains Toilets & Cafeteria.
- Should be visible to the guest and easy to reach.
- Cafeteria is a sitting area and a coffee corner

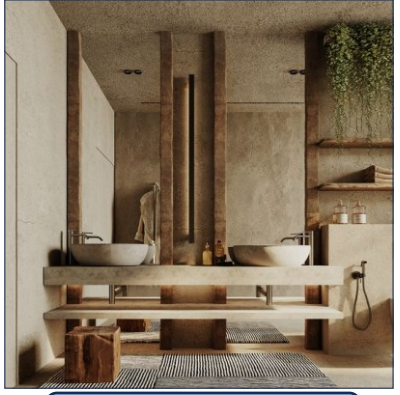
DESIGNING RATE:-

- Toilet minimum area is 28 m^2
- Sitting area without corridors 21 m^2
- Sitting area with corridors 25-30 m^2
- Main corridors width 2 m
- Secondary corridor width 0.9-1.2 m

FUNCTIONAL RELATIONSHIP:-

- Toilet & Cafeteria must have a direct relationship with the exhibition room and the entrance.

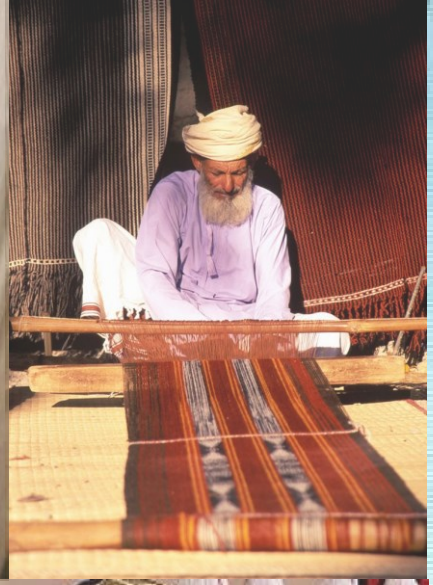


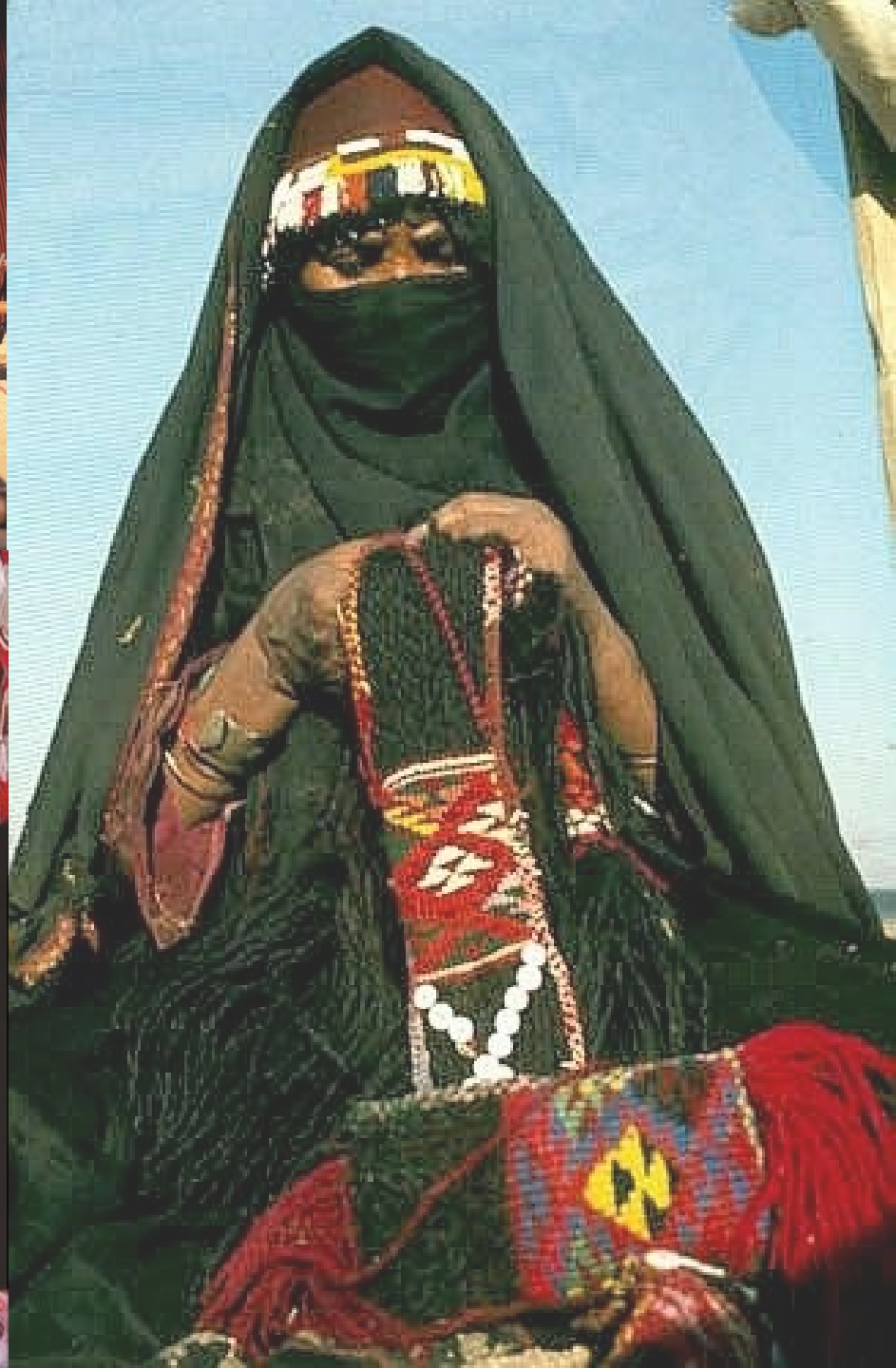


Toilet

Cafeteria

Cafeteria





COMMERCIAL HERITAGE

Designing Rates and Standards

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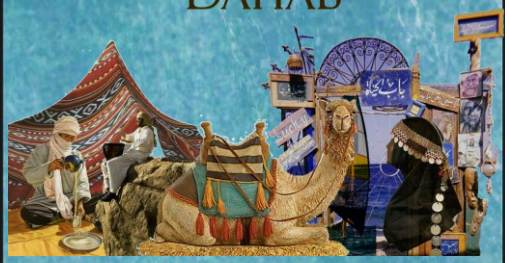
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
- **Open air mall**
- Food Court
- Events

WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Open Air Mall

STANDARDS AND PRINCIPLES:-

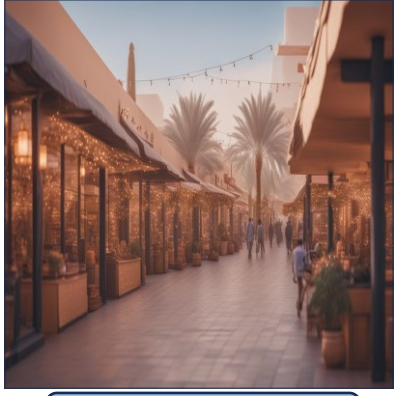
- The shape of the space must be rectangular so that it is easy to form it into two rows.
- The place contains 2 bathrooms and an office for management.
- It is possible to place booths inside the empty spaces.

DESIGNING RATE:-

- There is a corridor separating both rows, and the width of the corridor reaches 5 meters.
- The booth area is 2*2.
- Stores width 10 : 11 m
- Stores length 12 : 36 m
- Stores height 3 : 4.2 m

FUNCTIONAL RELATIONSHIP:-

- Open air mall is at the Centre of the commercial heritage.
- It has the accessibility to the food court and the events partition.



Open air mall

Open air mall

Open air mall

(متكامل تجاري مول تصميم وخطوات اسسongineering.com) - https://www.slideshare.net/NadaElsaed/mall-design-257176099

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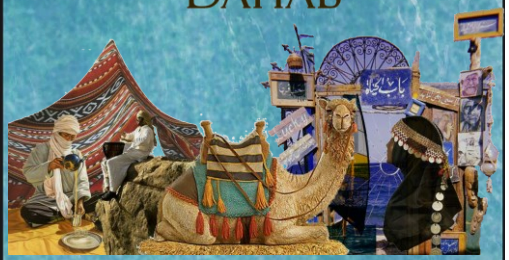
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
- Open air mall
- **Food Court**
- Events

WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

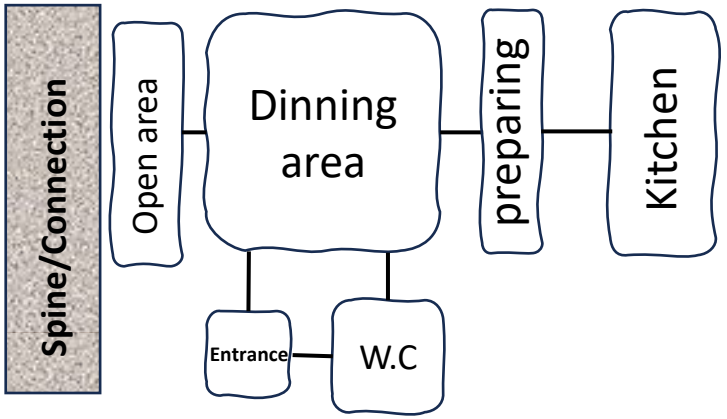
DAHAB



Food Court

STANDARDS AND PRINCIPLES:-

- Each Restaurant contains an interior dinning area & open area "exterior"
- Entrance, W.C and the Kitchen must have a direct relationship with the Dinning area.

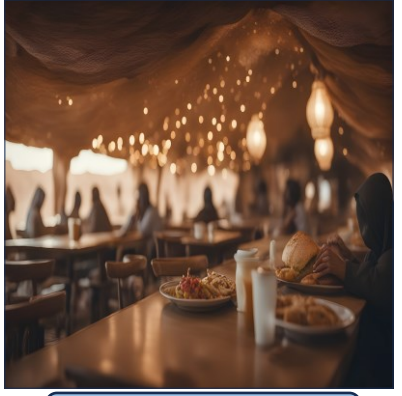


Relationship between the Restaurants Components

DESIGNING RATE:-

- Structural columns in a dinning area are best in the middle of a group of tables or at the corner of a table
- The ceiling height of a dinning area should relate to the floor area:
  H 2.50 m $\leq$ 50 m²
  H 2.75 m $\geq$ 50 m²
  H 3.00 m $\geq$ 100 m²
- Total space requirements for dinning area 1.4-1.6 m²/ seat
- Kitchen area requirements 0.4-0.5 m²/ seat

Neufert Architect Data



Open area

Open area

Open area

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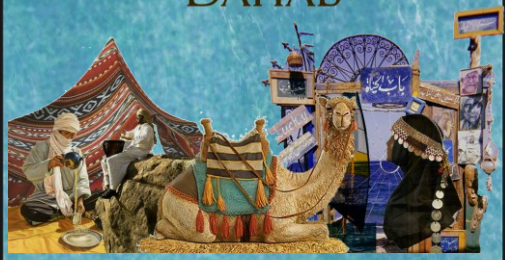
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
- Open air mall
- **Food Court**
- Events

WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



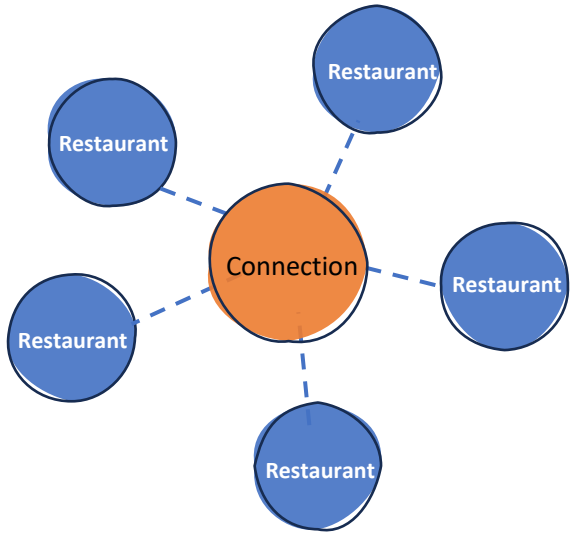
Food Court

Dinning floor area	Walkway width
Up to 100 m^2	≥ 1.10 m
Up to 250 m^2	≥ 1.30 m
Up to 500 m^2	≥ 1.65 m
Up to 1000 m^2	≥ 1.80 m
Over 1000 m^2	≥ 2.10 m

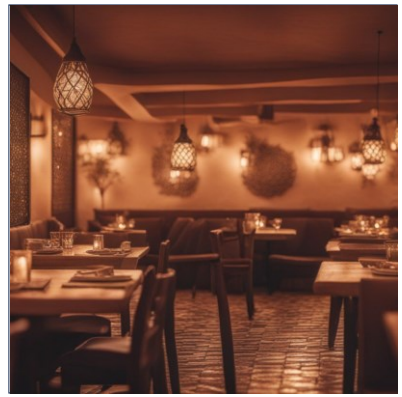
Tables	Seats	Waiter service (m^2/seat)	Self service (m^2/seat)
Square	4	1.25	1.25
Rectangle	4	1.10	1.20
Rectangle	6	1.05	1.10
Rectangle	8	1.00	1.05

FUNCTIONAL RELATIONSHIP:-

- All the Restaurants are gathered by one connection.



Dinning open area



Dinning closed area

Dinning open area

Neufert Architect Data

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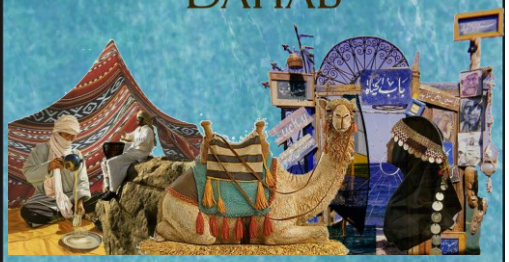
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
- Open air mall
- Food Court
- **Events**

WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



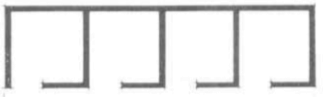
Events

1- Horse Stables

STANDARDS AND PRINCIPLES:-

- The basic needs controlling the design and construction of stable buildings may be enumerated as follows :
  1 . Dryness
  2. Warmth
  3. Adequate ventilation but with freedom from droughts
  4. Good drainage
  5. Good lighting, both daylight and artificial
  6. Adequate and suitable water supply

DESIGNING RATE:-



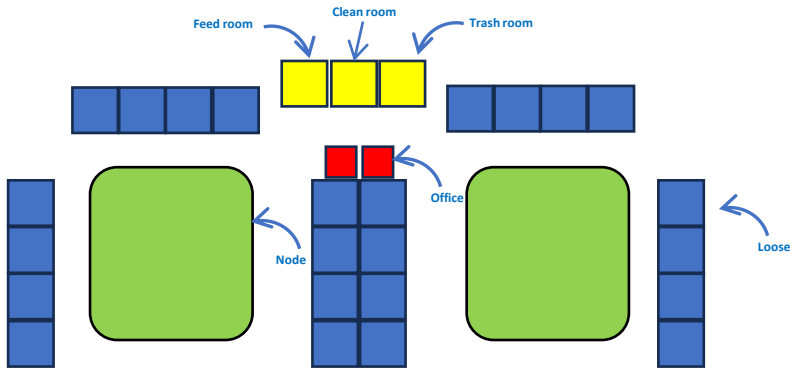
Loose box

- Suitable size for each loose box 3.6 × 3.6 m
- Every 4 loose boxes there is a feed room, trash room and a cleaning room

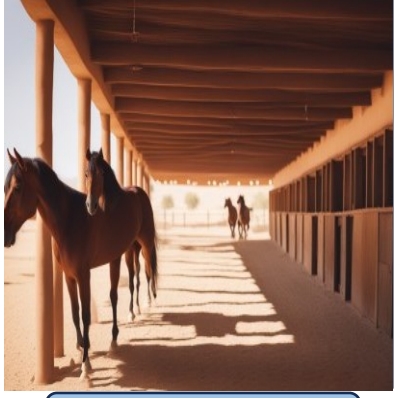
section

FUNCTIONAL RELATIONSHIP:-

- Loose boxes surrounded by each other with an office room, trash room, cleaning room and feed room in the middle



Time Saver Standards foe building types



Horse Stable

Horse Stable

Loose box

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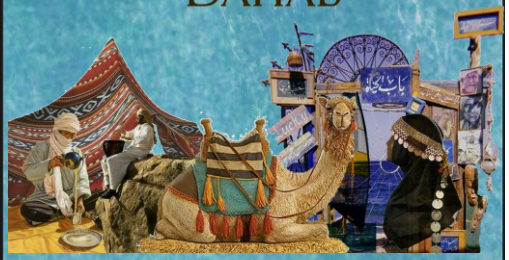
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
- Open air mall
- Food Court
- **Events**

WATER TRAINING CENTER

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Events

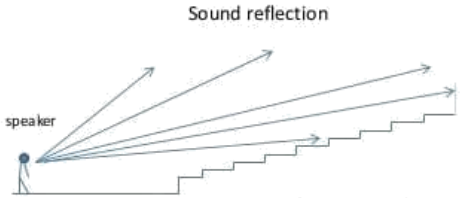
2- Open theatre

DESIGNING RATE:-

- Stage raised at 75 cm above the ground floor
- Slope of seating should not be less than 12 degree, for better audibility and visibility
- Noise level should not exceed 40 decibel
- Angle of view ≥ 20 degree
- Riser 15-17 cm, tread 28-30 cm

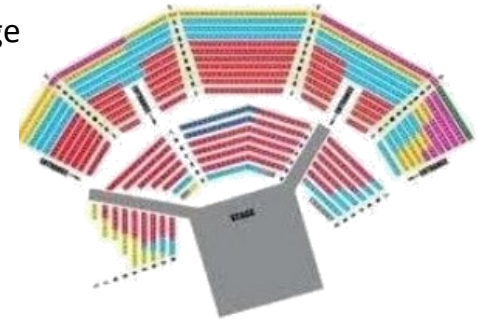
This includes the lobby, coat check, ticket counters, and restroom. The amount of space required for each auditorium depends on a number of factors but the following guides, based on modern seating design can give you an idea of the area needed:

•200 seats: 270m²
•150 seats: 190m²
•75 seats: 125 m²



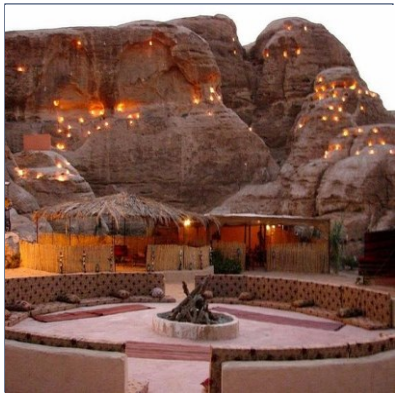
FUNCTIONAL RELATIONSHIP:-

- Should be near the house stable
- At the end of commercial heritage



https://www.scribd.com/presentation/471807835/Open-air-theatre-OAT

Folklore



Open air theatre

Open air theatre

WATER TRAINING CENTER

Designing Rates and Standards

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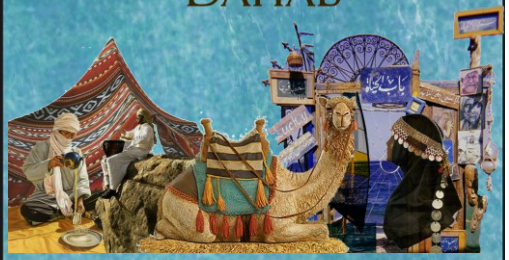
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER
- **Water sports store**
- Storage room
- Changing room

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Water sports store

STANDARDS AND PRINCIPLES:-

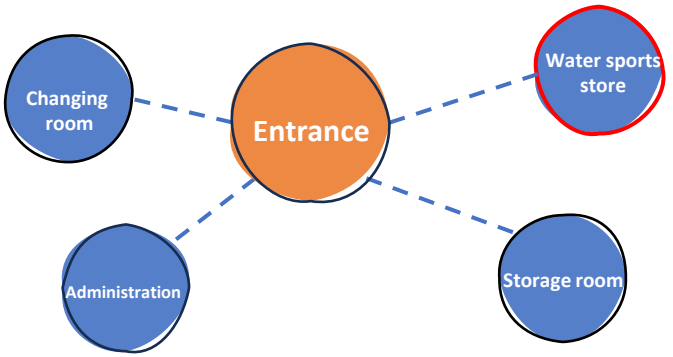
- The shape of the space must be rectangular so that it is easy to form it into two rows.
- The place contains 2 bathrooms and an office for management.
- It is possible to place booths inside the empty spaces.

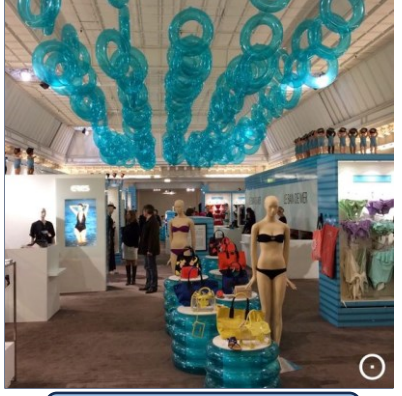
DESIGNING RATE:-

- There is a corridor separating both rows, and the width of the corridor reaches 5 meters.
- The booth area is 2*2.
- Stores width 10 : 11 m
- Stores length 12 : 36 m
- Stores height 3 : 4.2 m

FUNCTIONAL RELATIONSHIP:-

- Water sports store should have a direct relationship with the entrance and the storage room





Water sports store

Water sports store

Water sports store

) اسس وخطوات تصميم مول تجاري متكامل ongineering.com) - https://www.slideshare.net/NadaElsaed/mall-design-257176099

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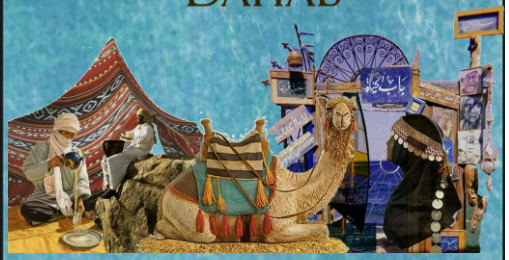
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER
- Water sports store
- **Storage room**
- Changing room

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Storage room

STANDARDS AND PRINCIPLES:-

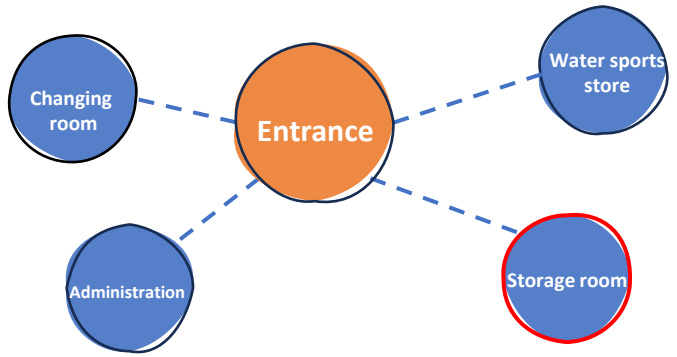
- The room floor should be far enough below the water level in the pool to ensure that the pumps are in a constant flood condition to help prevent loss of prime.
- The floor should be properly sloped with efficient drainage.

DESIGNING RATE:-

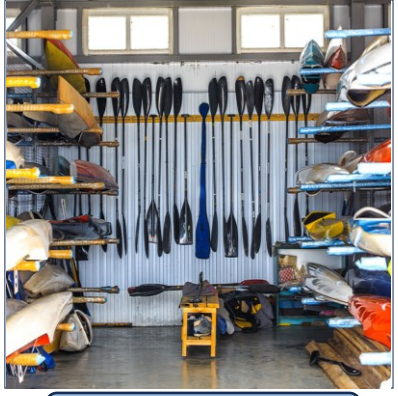
- The room should be sized so that there is at least 1.8 m^2 of clear space around all the equipment and not less than 0.9 m^2 between individual components for ease of maintenance.
- Extra space should be planned as well for replacement of larger items such as filters and heaters
- The ceiling height of the room should not be less than 3.6 m^2 to allow for overhead piping

FUNCTIONAL RELATIONSHIP:-

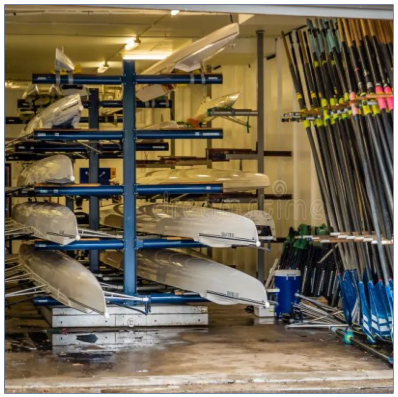
- Storage room should have a direct relationship with the water sports store partition



Tips for Designing Equipment Rooms| Aquatics International Magazine (aquaticsintl.com)



Surfing storage



Kayaking storage

Storage room

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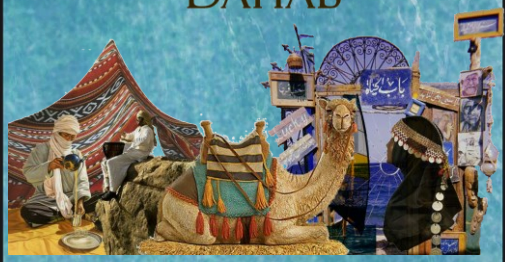
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER
- Water sports store
- Storage room
- **Changing room**

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

DAHAB



Changing room

STANDARDS AND PRINCIPLES:-

- Male and female locker rooms shall include:
  1. One locker per employee (lockers shall be corrosion resistant).
  2. Washrooms.
  3. Showers.
  4. At least one floor drain, more if layout dictates.
  5. A bench in the locker area [length proportionate to the number of lockers, at least 90 cm] .
  6. Card reader lock at corridor door.

- Showers area shall be adjacent, but separate, from lockers area.

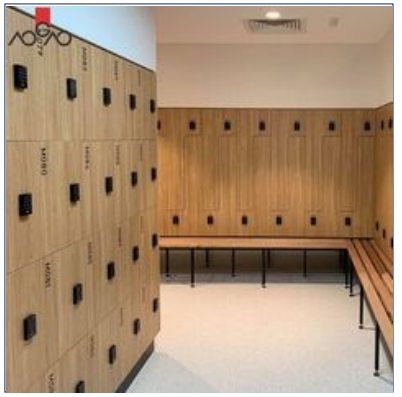
- Clothes storage lockers can be arranged in central banks or along changing room walls.

- Each changing unit requires its own showers located as far as possible from changing entrances and WCs to minimise water migration and to separate mud and moisture.

- Showers should be at the far end of any changing area and never accessed directly from main corridors

- Toilets should be positioned beside lockers

Changing room



Lockers

Shower Cabinet

Microsoft Word - 15.Staff Rooms.doc (mcgill.ca)

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
MOTEL
SERVICES
CRARTS CENTER
COMMERCIAL HERITAGE
WATER TRAINING CENTER
- Water sports store
- Storage room
- **Changing room**

-Planning Rates and Standards
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

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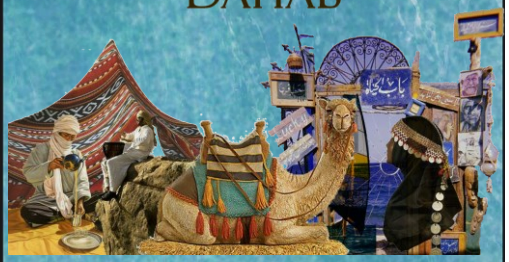


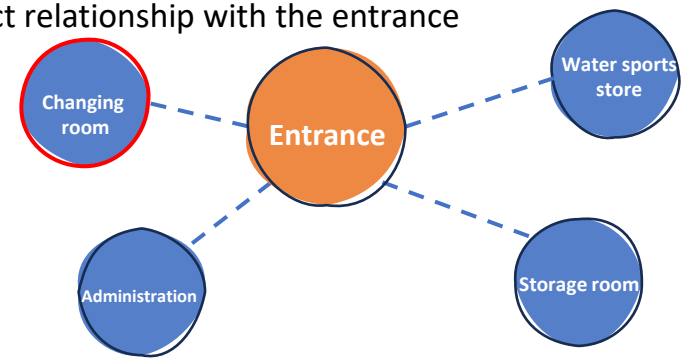
Changing room

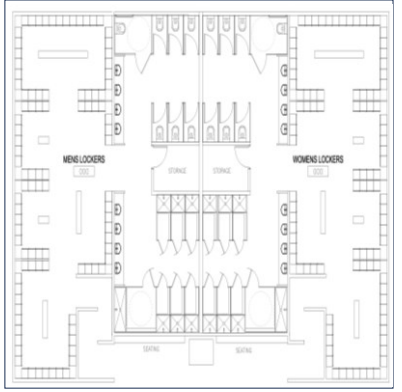
DESIGNING RATE:-

- Generally, the minimum area is calculated at 1 m^2 per person.
- Minimum clearance of 1.5m in front of Locker so that open locker doors do not obstruct circulation.
- Minimum locker size is 90cm high, 30cm wide and 45cm deep.
- Shower outlets should be at 75cm intervals with 45-50cm between end fittings and side-walls.
- Men's facilities should be provided with one WC, two Unirals and two washbasins per 20 changing spaces.
- Women's facilities should be provided with two WCs and two washbasins per 20 changing spaces.
- Showers on opposing walls should be spaced 2.5m apart to permit a central circulation route and will require a separate dry-off area to one end.

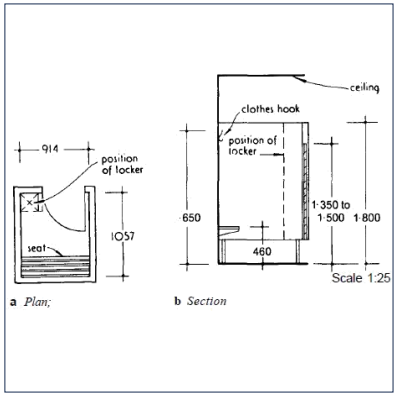
FUNCTIONAL RELATIONSHIP:-

- Changing room including the toilets and the lockers should have a direct relationship with the entrance

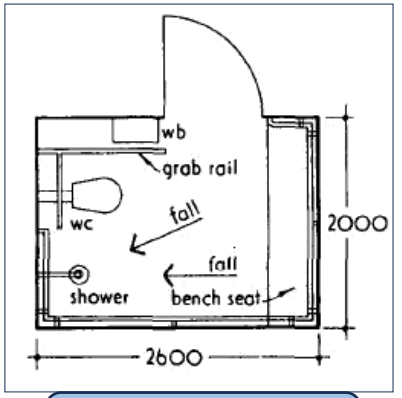




Gender-separated Design



Changing cubical



Disable people changing room

Design Considerations for Commercial Showers Rooms | Commercial Washrooms (commercialwashroomsltd.co.uk)

Planning Rates and Standards

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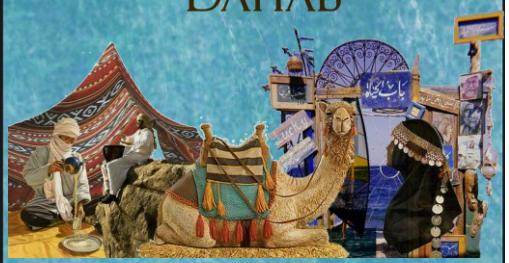
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7



Standards and Principles

FIRST: THE STANDARDS OF CHOOSING A TOURISM PROJECT SITE: -

When planning areas Tourism must take in consideration the sensitive freedom, psychological comfort, familiarity with nature and the optimal use of the elements of coordination Landscape.

***Select Location:-**

- Choose a site with distinctive qualities and special natural attractions.
- A site with high tourist attractions with distinctive visual vision.
- Taking in consideration the impact of various climatic factors that affect the site.
- Availability of infrastructure services (drainage network & fresh water supply & power plants.
- Easy access to the area.
- Preserving the topographic nature of the site, which requires areas in line with their contour nature.

Site near the sea

Attract Tourism

Familiar site

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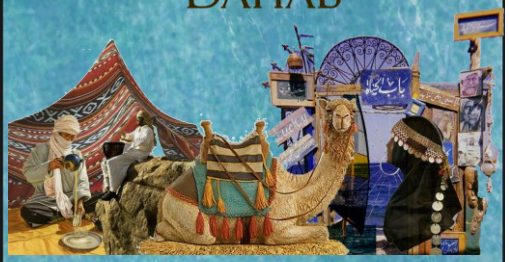
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

دهب
DAHAB



Standards and Principles

SECOND: GENERAL PLANNING OF THE SITE: -

The general planning of the project must be developed so that the general perception of the project reflects the entire hotel or tourist village inclusive of all Stages.

*** General rules to be followed when planning the general site:**

- Creating a distinct tourist environment in which the potential of the region or country is exploited and commensurate with the nature of the land and the climate of the region.
- It must be taken in consideration that the general plan of the hotel or village is integrated with other tourist areas in the area.
- It must be taken in consideration to link the elements of the various tourist uses through pedestrian paths and road networks, which achieves ease of use of the elements of the hotel or village as well as achieving the necessary privacy for guests.
-
- It must be taken in consideration to coordinate the location of the hotel or village in proportion to the climatic nature of the region, the use of local and natural materials, and the best use of public and private spaces.
- The basic infrastructure works of the hotel or village (road networks, fresh water supply, electricity, sewage, etc.) must be commensurate with the nature of the land, the region and international averages.
- The general planning must comply with the general conditions and rules (for the planning of the hotel or tourist village) of the world as well as the conditions issued by the Ministry of Tourism in this regard.

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Standards and Principles

THIRD: ARCHITECTURAL PLANNING OF THE HOTEL OR TOURIST VILLAGE: -

-If the project site is on a seashore, the largest number of units must enjoy the seaside front with no defect in allowing air to permeate the back areas of the project.

-The internal movement of the project should depend on pedestrian traffic only.

-There must be an intermediate area for services that can be used to create an income space overlooked by units that cannot see the sea, such as (swimming pools & artificial lakes .. etc.).

-Taking in consideration the visual sequences of the area and not conflicting planning and building shapes with the sky line and the mountains surrounding the area.

-When using plants and quarrels in external coordination, they must not block the visual view of the sea and allow air movement to pass through and permeate the rear areas of the project.

-Taking in consideration future buildings and extensions (if the project is in stages) without affecting the general planning of the project.

-The design must take in consideration giving the project a special character integrated with the surrounding environment and the local model so that For the tourist to live real coexistence in them.

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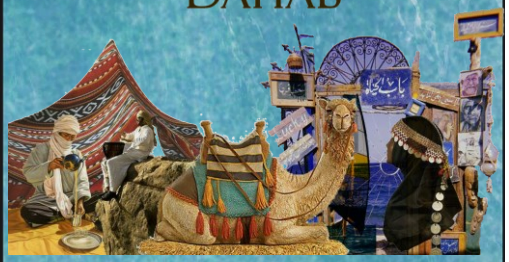
CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

دهب
DAHAB



Standards and Principles

FOURTH: CRITERIA FOR PLANNING TOURIST AREAS: -

-It is preferable that the general layout of the main path in the street network within the site so that it is almost perpendicular to Prevailing wind directions.

-The corridors are in the directions of the prevailing winds and the directions perpendicular to them with attention to the situation of quarrels and elements Green on the road network within the site to protect the building from harmful winds.

-Take advantage of the attractive landscape to direct the units to it.

-The impact of the climatic element must be addressed by directing the building and determining its dimensions and the shape of the openings.

-Preserving the vegetation cover and the different types of quarrels and palms present at the site.

-The urban formation must mean the spatial separation between the different uses through pedestrian paths and area Central green.

-Integration with the nature of the site.

-It is preferable to give the architectural character of the area to any facility.

-Use of local construction materials.

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CHAPTER 1
CHAPTER 2
CHAPTER 3

-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES

CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Standards and Principles

Structural conditions
Prepared by the General Organization for Urban Planning
Foundations and design considerations: -

- The necessity of grading the heights of the buildings so that all units enjoy the sea view.
- Away from the methods of residential blocks in the design of buildings for tall units because they reflect the stereotypical methods that give a sense of boredom and monotony, which does not achieve the element of attraction and tourist creativity due.
- Attention to pergolette and garden dividers that achieve the privacy of use of different places and so that they appear beautifully.
- The need to pay attention to green spaces and agriculture as one of the most important elements of the foundations of site coordination
- The architectural character depends on the use of the element of the environment and its development in a way that suits the architecture of coastal areas.

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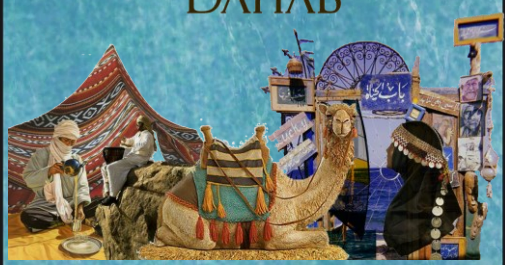
CHAPTER 1
CHAPTER 2
CHAPTER 3
-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7



Standards and Principles

Main entrance and parking "covered & exposed":-
Care must be taken to coordinate the external areas of the tourism project, especially the tourist villages, and pay attention to the shape of the main entrance and an equipped easy road network, as well as parking lots

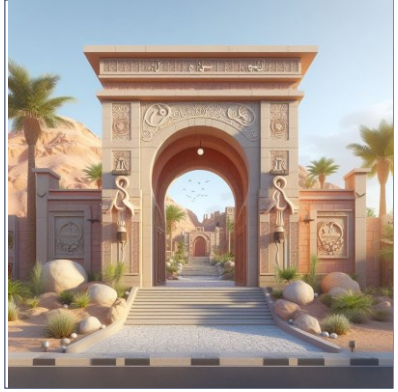
1-Fences defining the land of the project:
- The architect determines the shape of the fences provided that it is sufficiently illuminated

2- Telephone Cabinet : -
- It monitors and guards at the confluence the edges of the fence, i.e. Everywhere.

3- Main Gate: -
- A gate of buildings and concrete in a manner determined by the architect
- Signs with the name of the project on the main gate specifying the designer
- Large headlights

4- Covered parking: -
- Parking lots are prepared with covered roofs and an entrance with a control room, in addition to a workshop equipped with equipment and car mechanics tools

5- Parking and tourism buses: -
- The parking lot and tourism buses are divided to allow parking according to the required meter and implemented in accordance with traffic rules and the work of the entrance to the observation.


Main Entrance

Covered Parking

Covered Parking

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WSH - TUNIS

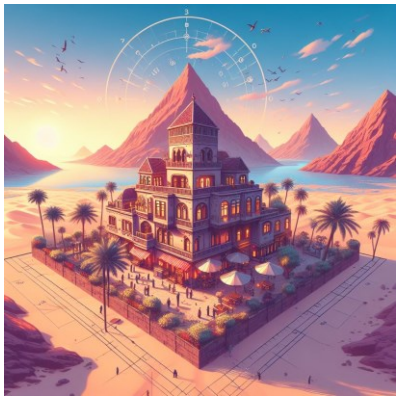
CHAPTER 1
CHAPTER 2
CHAPTER 3
-Designing Rates and Standards
-Planning Rates and Standards
STANDARDS AND PRINCIPLES
DESIGN RATES
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7

Design Rates

FIFTH: PLANNING MODIFIER FOR THE ESTABLISHMENT OF TOURIST VILLAGES IN EGYPT: -

- The area allocated per person on the beach ranges between 10-15 meters / person
- The person capital share of the village land area is 120 m^2 (50 m^2 of the beach + 30 m^2 of stature + 20 m^2 of recreational activity + 20 m^2 of services)
- The bed area of services is 20 m^2 / bed
- Open and recreational areas amounting to 30% - 40% of the site area (30 m^2/bed)
- Offers of main walkway paths and internal roads:
- A. Internal roads of services with a width of less than (8) meters.
- B.The main walkway with a width of less than (6) meters.
- The maximum height of the establishments except for hotels that are established in the area, which start at a distance of (120) meters from the water limit, not exceeding two floors, and a maximum of (7) meters until the highest level of the last floor hatchet, except for water tanks, stair rooms and elevators.

Main Walkway



Height max. level

Person area on land

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CHAPTER 4

- **Project Examples**

-SANGAN HOTEL

-MASSIVE CULTURE CENTER

- ANNAR TRADITIONAL SOUQ

- BEYOND THE LIMITS

- PALM CENTRE

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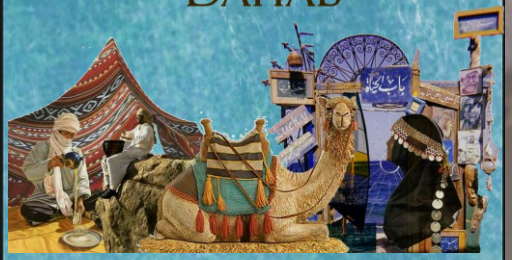
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



Sangan Hotel, a Tent-Like Developement in the North-East of Iran

- **Project Name:** Sangan Hotel
- **Architecture Firm:** FMZD | Farshad Mehdizadeh Design
- **Gross Built Area:** 50,000 sqm
- **Project location:** Sangan, Iran
- **Lead Architects:** Farshad Mehdizadeh
- **Photo credits:** Ali Kazemi
- **Design Team:** Farshad Mehdizadeh (Principal Architect) Aida Sarboland, Farnoosh Aghamirza

https://www.archdaily.com/932192/fmzd-imagines-sangan-hotel-a-tent-like-developement-in-the-north-east-of-iran?ad_medium=gallery

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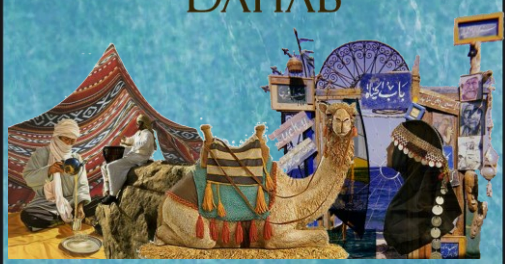
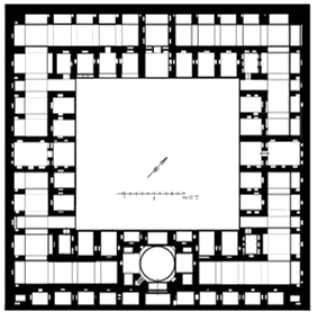
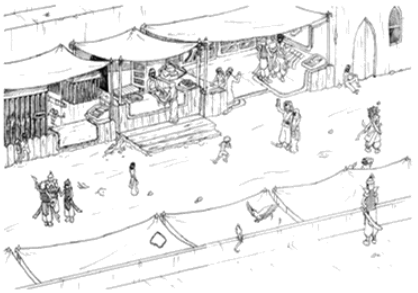
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



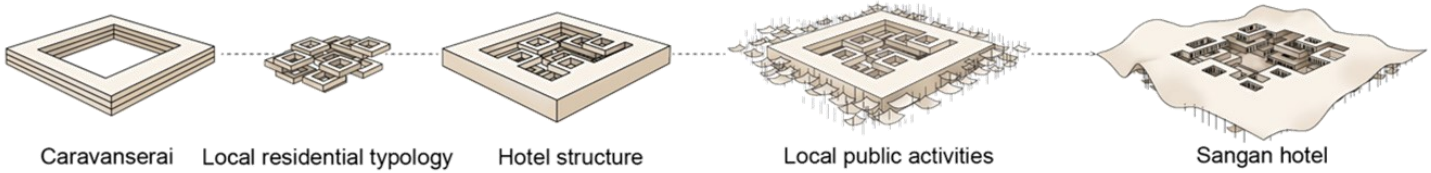
Sangan Hotel, a Tent-Like Developement in the North-East of Iran

Concept: the architect made a combination between the traditional hotel typology and the local shape of activities from Sangan that define and represent the Iranian culture


Hotel traditional typology


Local activities from Sangan

Sangan Hotel Complex



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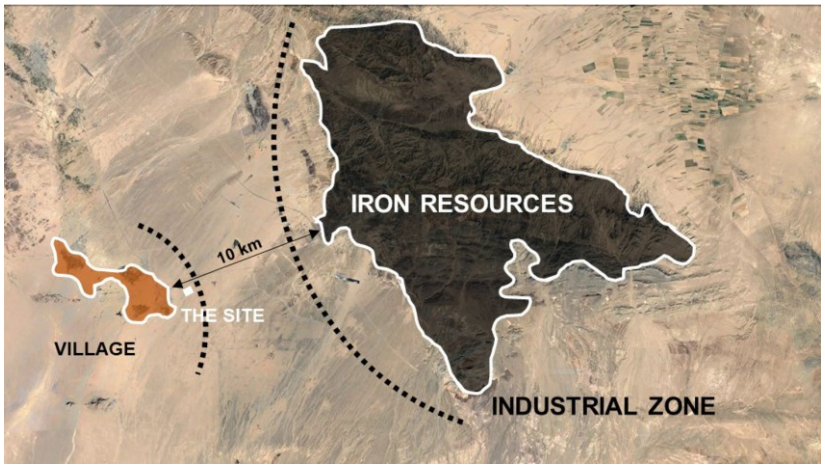
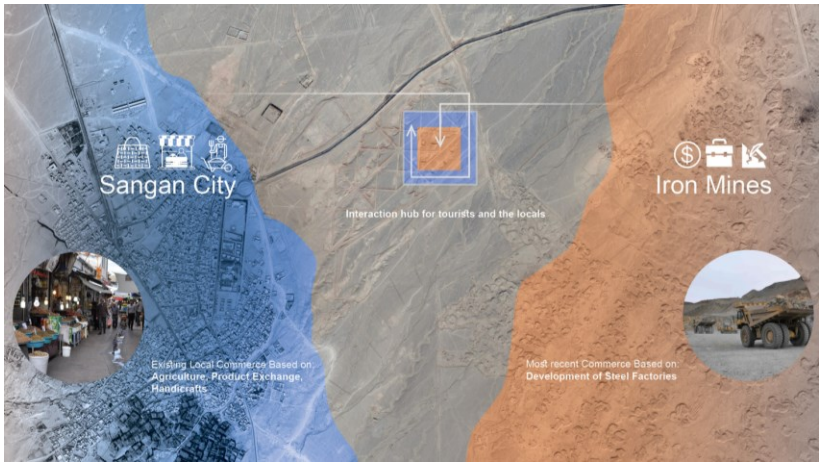
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

Sangan Hotel, a Tent-Like Developement in the North-East of Iran

Location : Sagan's local commerce, originally based on agriculture, product exchange and handicrafts, has shifted suddenly towards the development of steel factories with the recent discovery of an iron mine. With a new-found purpose, the city is attracting an important number of visitors. Nevertheless, amenities and accommodation that help the town adapt to these changes, are still missing. In fact, the architect states that ***"even though these developments have had a positive impact on this town, still, it suffers from a lack of residential and hospitality functions for the mounting number of visitors".***




Sangan City
Interaction hub for tourists and the locals
Iron Mines
Existing Local Commerce Based on Agriculture, Product Exchange, Handicrafts
Most recent Commerce Based on Development of Steel Factories

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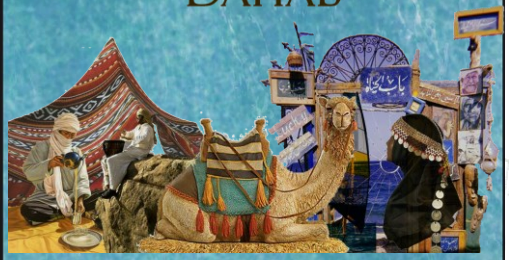
وش تونس
WSH - TUNIS

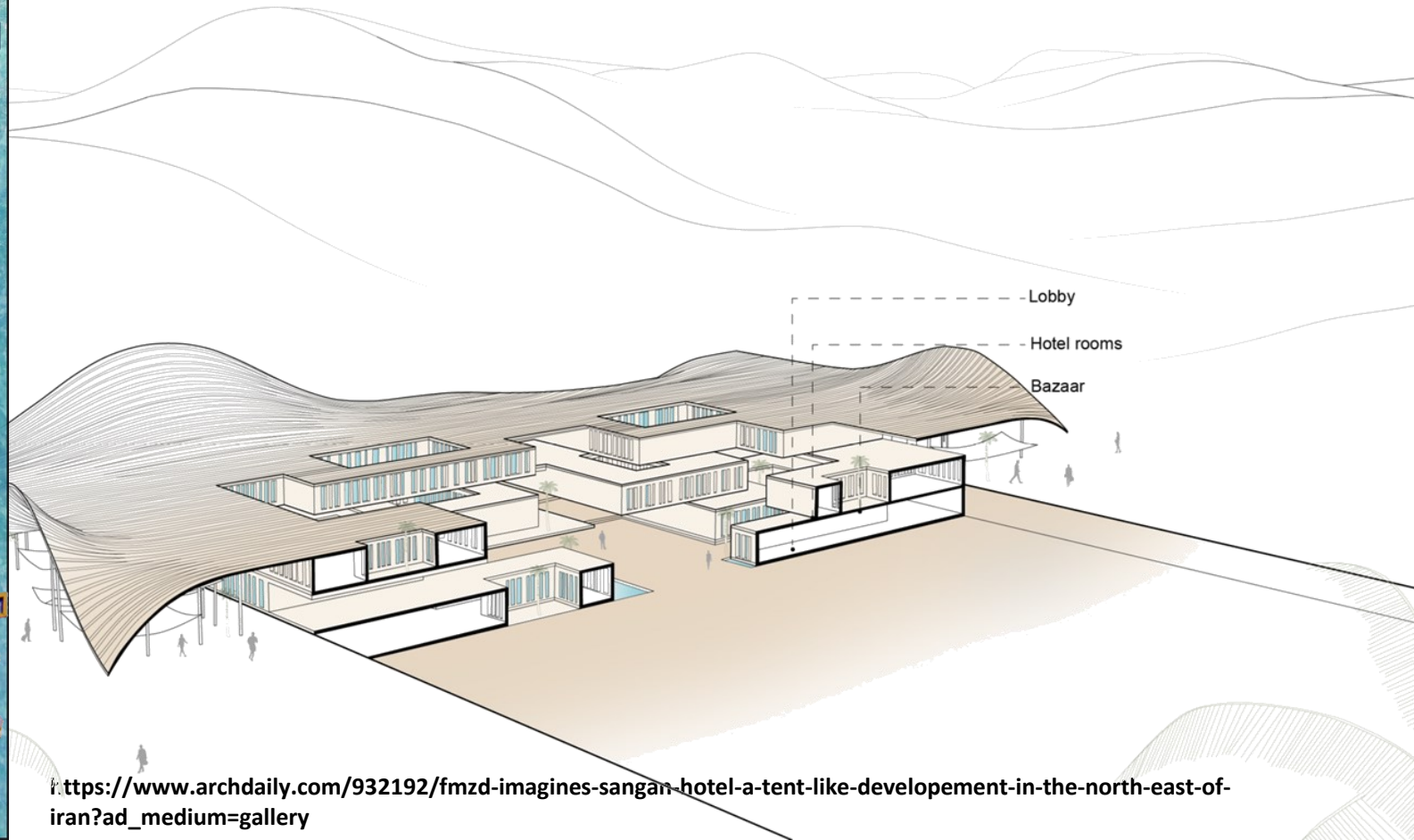
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



Sangan Hotel, a Tent-Like Developement in the North-East of Iran

Project construction : With the purpose of attracting "*industrial tourists",* the brief called for an iconic structure, that provides accommodation and other facilities. FMZD's proposal challenged the task and proposed **a low rise building that blends with the urban fabric of the town**. The firm's approach to the required program has also drifted from the initial function, in order not to *"negatively impact the locals' vulnerable source of income*".



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وش تونس
WSH - TUNIS

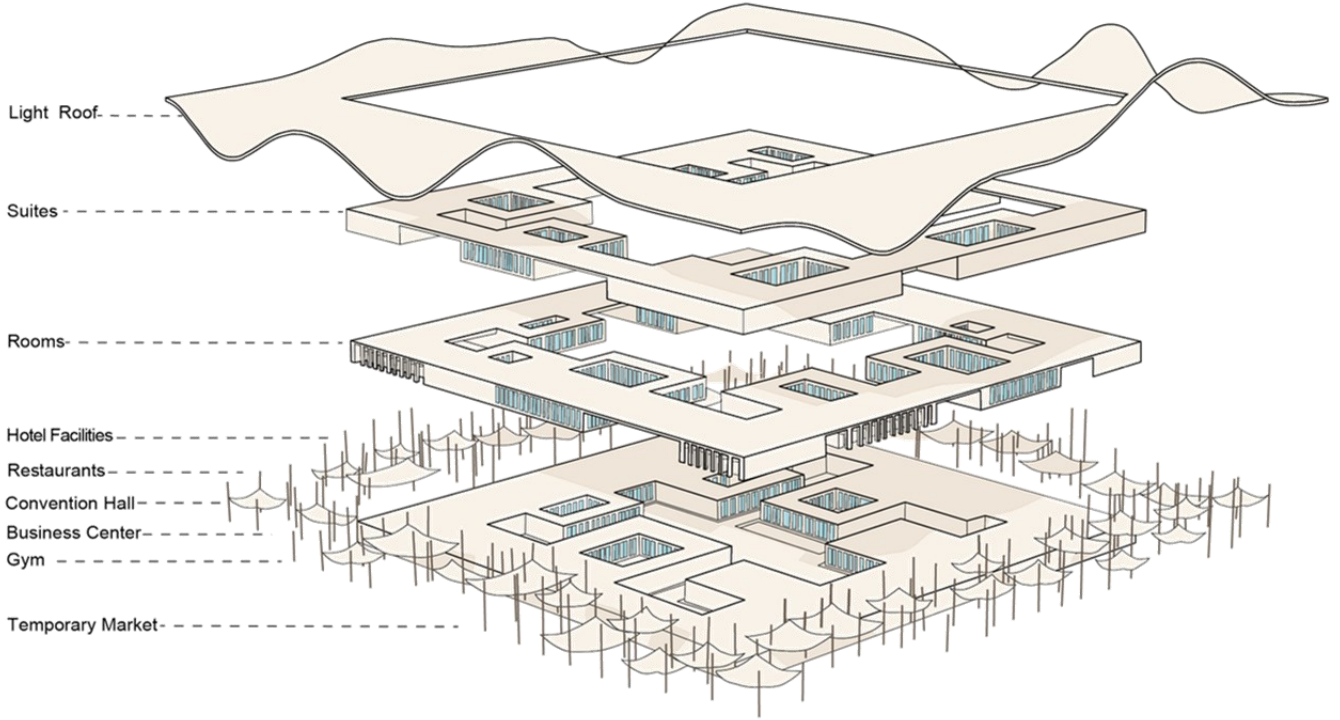
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

Sangan Hotel, a Tent-Like Developement in the North-East of Iran

Project formation: an organized grid of voids shapes the interior space. "*A central yard acts like an oasis and performs as a public space for the hotel*".

The design inspired by the form of traditional primitive tent structures, allowed the architects to lower the hotel tower and increase the footprint of the building to be more familiar and interactive with local people.

Surrounded by flexible outdoor areas, the project generates spaces suitable for temporary local markets. These activities are organized and protected by a perforated shelter made of local mat and wood.



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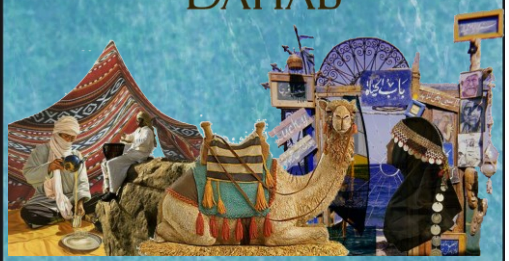
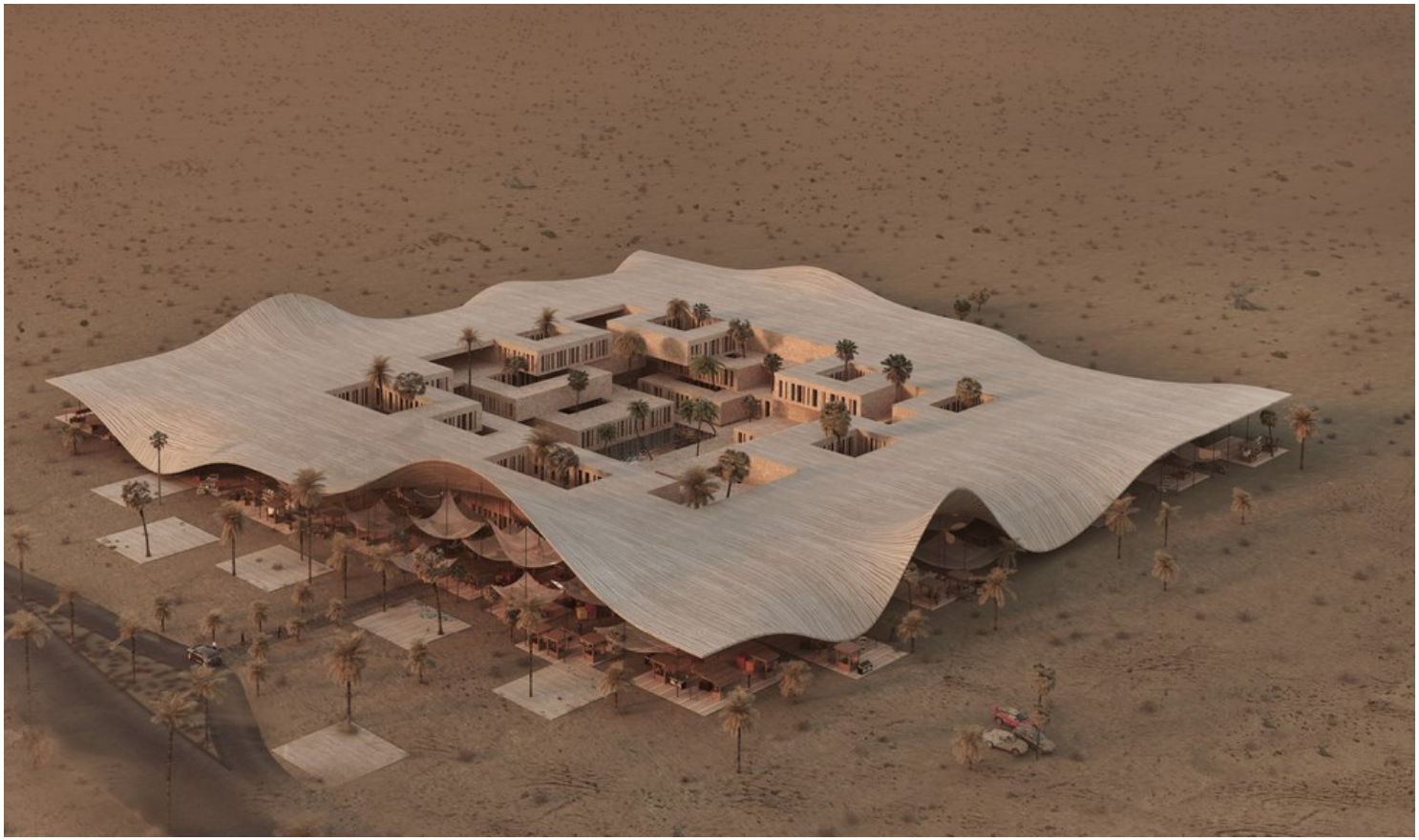
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Sangan Hotel, a Tent-Like Developement in the North-East of Iran

This market is organized and protected by a perforated shelter made of local mat and wood. It is the extension of the complex's ceiling with the dynamic and form of traditional primitive tent structures. Using this typology as a reference, provided us with the contextual tools to lower the hotel tower and increase the footprint of the building to be more familiar and interactive with local people.



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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
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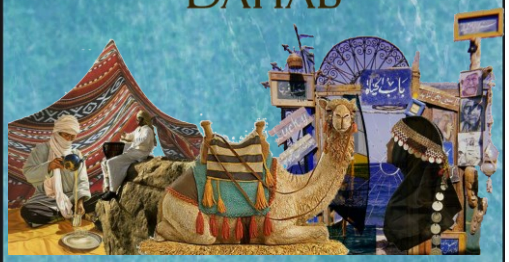
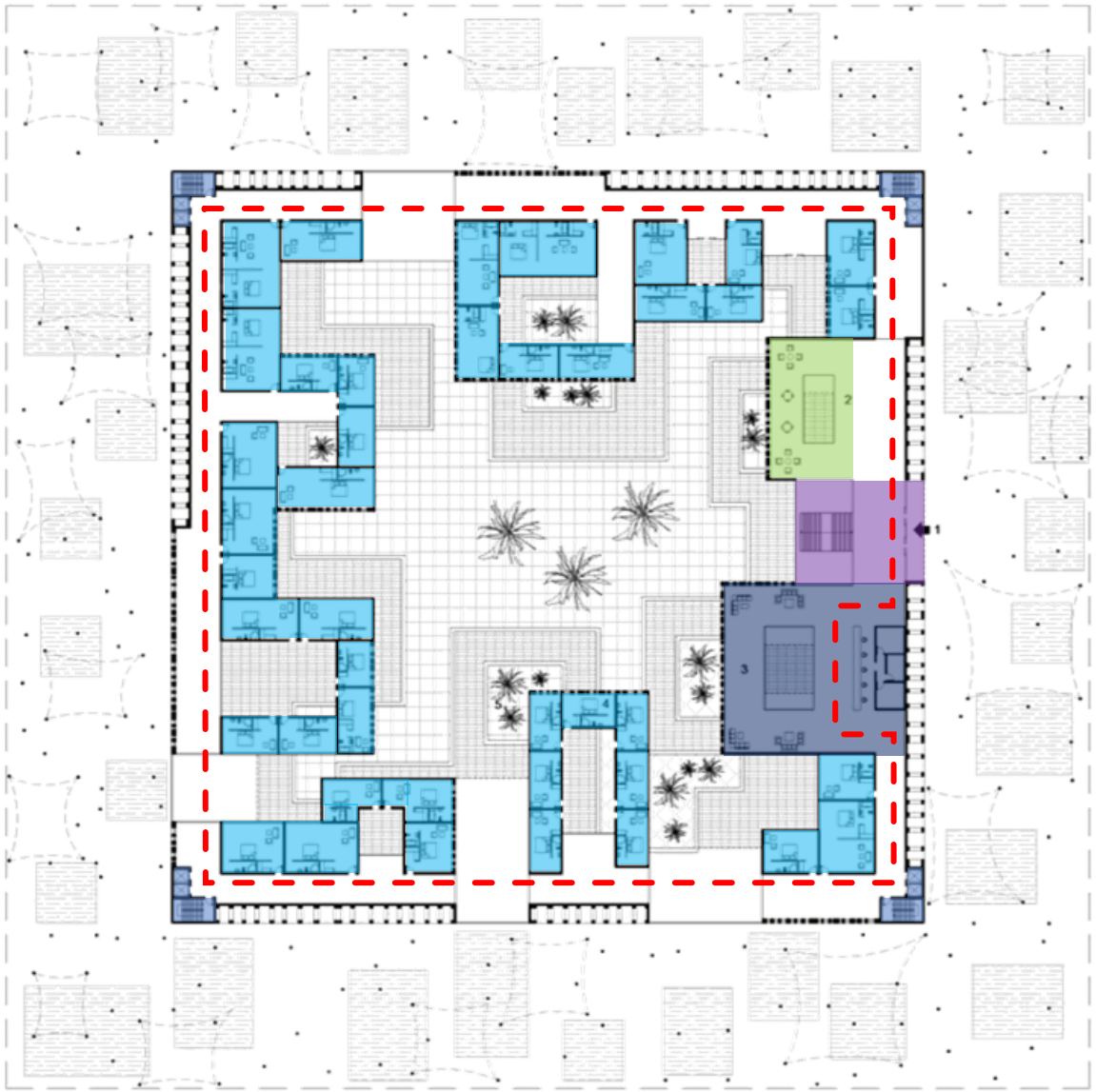


Sangan Hotel, a Tent-Like Developement in the North-East of Iran

Ground Floor Plan

1. Entrance
2. Coffee shop
3. Lobby
4. Rooms
5. Circulation
6. Stairs & elevators



https://www.archdaily.com/932192/fmzd-imagines-sangan-hotel-a-tent-like-developement-in-the-north-east-of-iran?ad_medium=gallery

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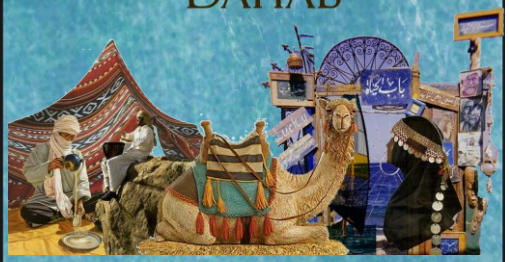
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

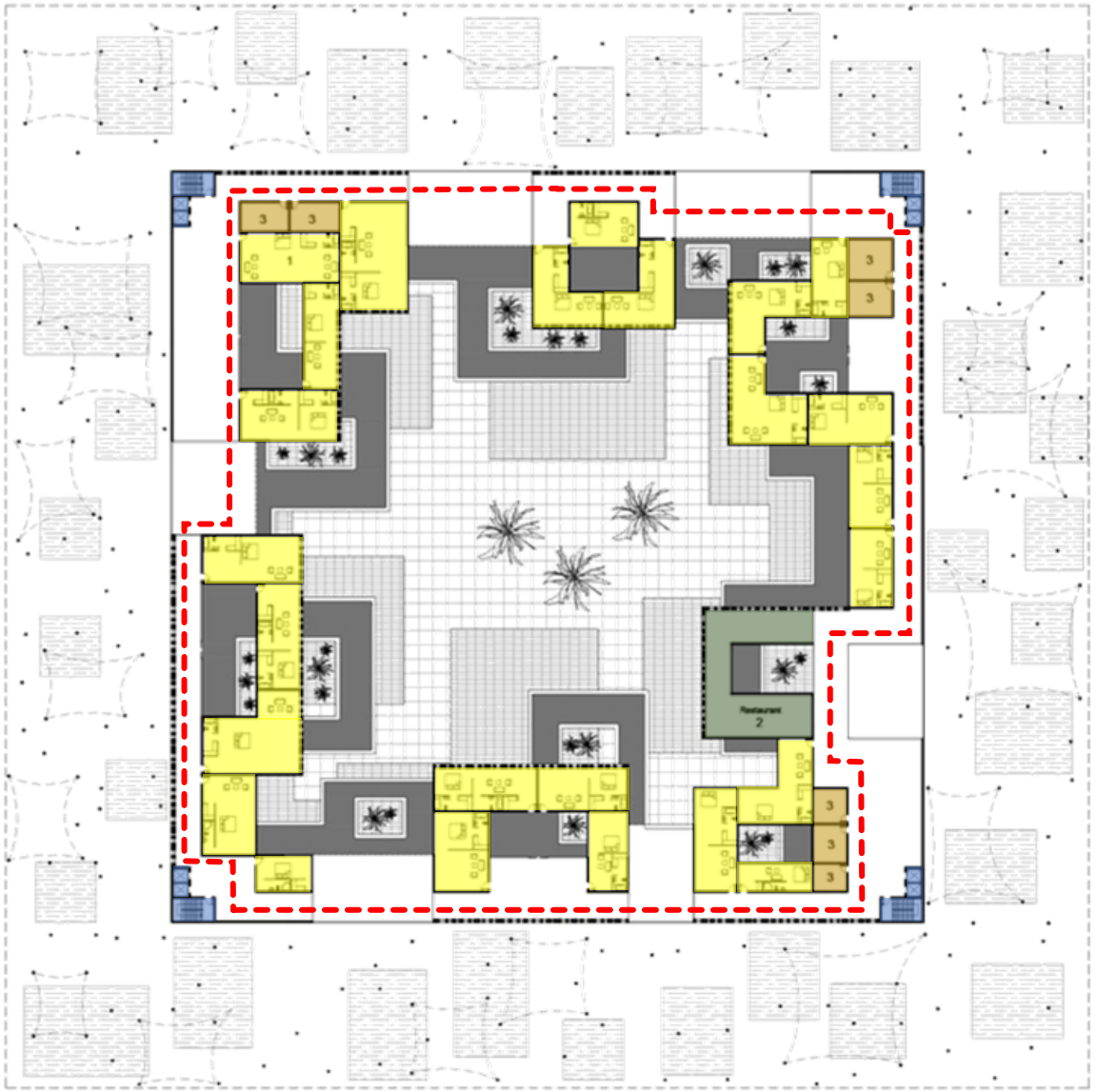
ذهب
DAHAB



Sangan Hotel, a Tent-Like Developement in the North-East of Iran

First Floor Plan

1. Suites
2. Restaurants
3. Room services
4. Circulation
5. Stairs & elevators



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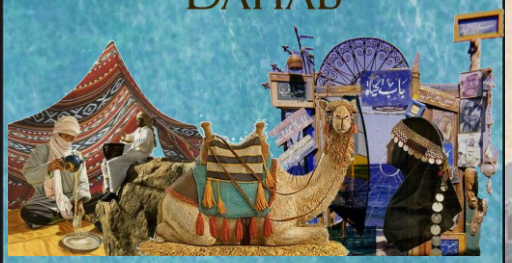
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



Massive Culture Center in Marrakesh

- **Project Name:** Massive culture center
- **Project location:** Marrakesh, Morocco
- **Architect:** Riham Faragallah
- **Graduation Project**

https://uni.xyz/projects/passive-culture-center-in-marrakech-desc

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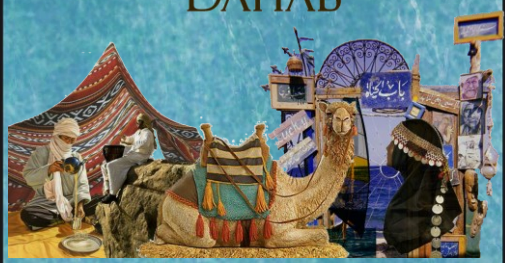
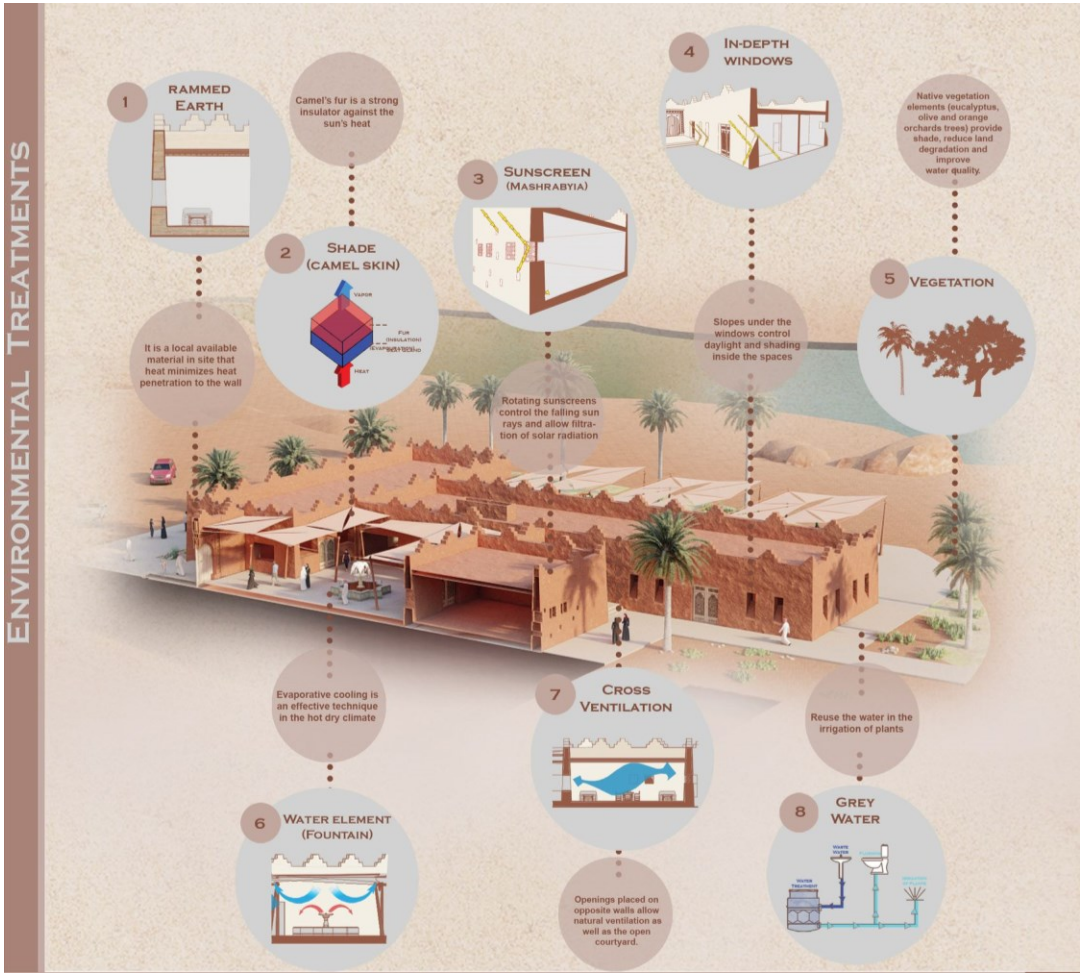
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

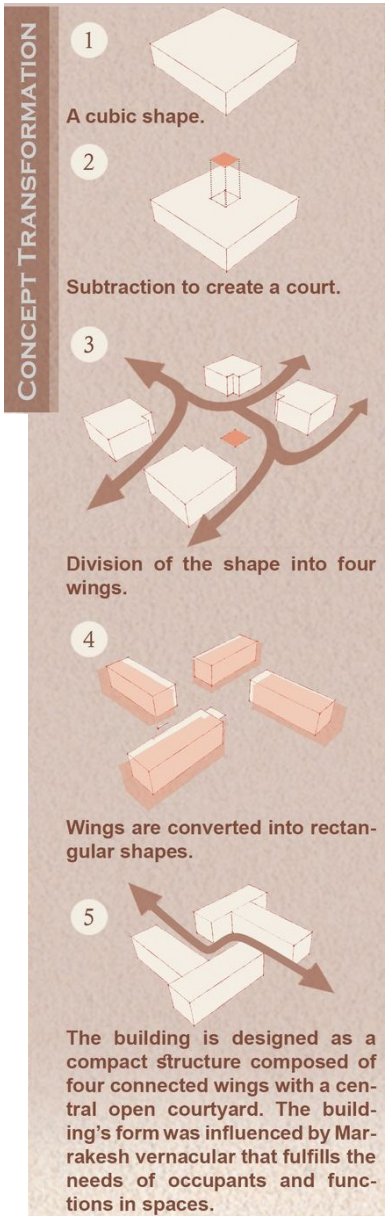


Massive Culture Center in Marrakesh

CONCEPT: Designing a massive cultural center in Marrakesh that combines traditional architectural principles with solar and wind energy control and to use a natural properties of building materials to ensure that the interior spaces remain cool in summer and warm in winter


ENVIRONMENTAL TREATMENTS
1 RAMMED EARTH
Camel's fur is a strong insulator against the sun's heat
2 SHADE (CAMEL SKIN)
3 SUNSCREEN (MASHRABYIA)
4 IN-DEPTH WINDOWS
Native vegetation elements (eucalyptus, olive and orange orchards trees) provide shade, reduce land degradation and improve water quality.
5 VEGETATION
It is a local available material in site that heat minimizes heat penetration to the wall
Slopes under the windows control daylight and shading inside the spaces
Rotating sunscreens control the falling sun rays and allow filtration of solar radiation
Evaporative cooling is an effective technique in the hot dry climate
7 CROSS VENTILATION
Reuse the water in the irrigation of plants
6 WATER ELEMENT (FOUNTAIN)
8 GREY WATER
Openings placed on opposite walls allow natural ventilation as well as the open courtyard.

https://uni.xyz/projects/passive-culture-center-in-marrakech-desc


CONCEPT TRANSFORMATION
1
A cubic shape.
2
Subtraction to create a court.
3
Division of the shape into four wings.
4
Wings are converted into rectangular shapes.
5
The building is designed as a compact structure composed of four connected wings with a central open courtyard. The building's form was influenced by Marrakesh vernacular that fulfills the needs of occupants and functions in spaces.

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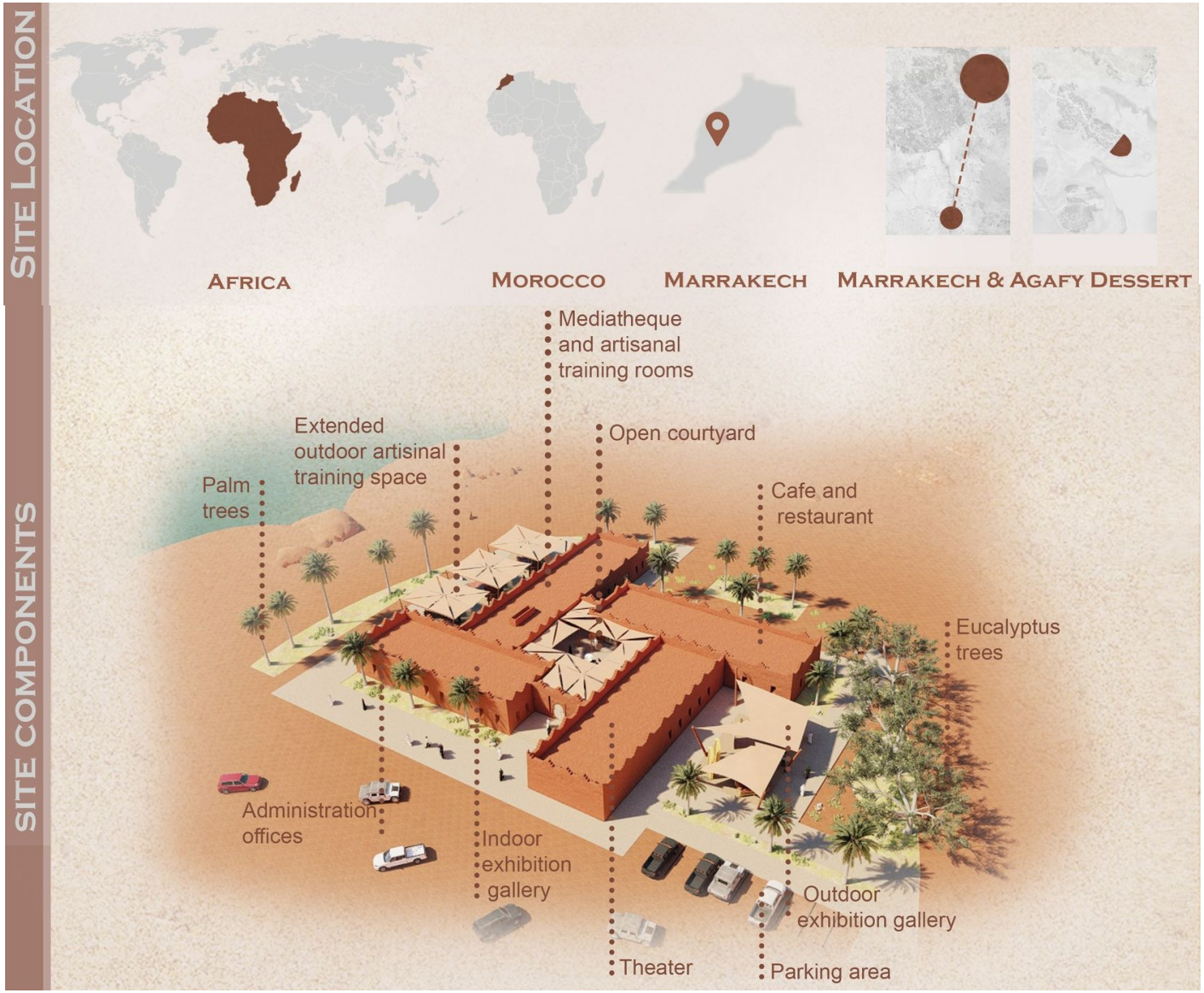
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

Massive Culture Center in Marrakesh



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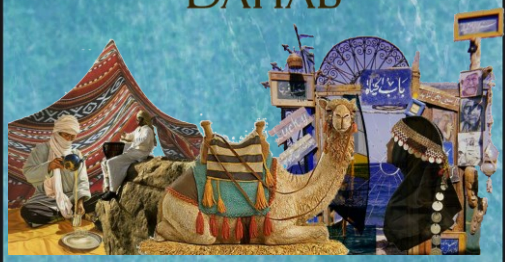
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



Massive Culture Center in Marrakesh

SITE PLAN

1. Main entrance
2. Secondary entrance
3. Open courtyard
4. Indoor exhibition gallery
5. Administration offices
6. Toilets
7. Mediatheque "TV room"
8. Mediatheque "library"
9. Artisanal training room "carpet, sculpture, tables"
10. Music conservatory
11. Extended outdoor artisanal training space
12. Foyer
13. Theater
14. Storage
15. Cafe and Restaurant
16. Kitchen
17. Outdoor exhibition gallery

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
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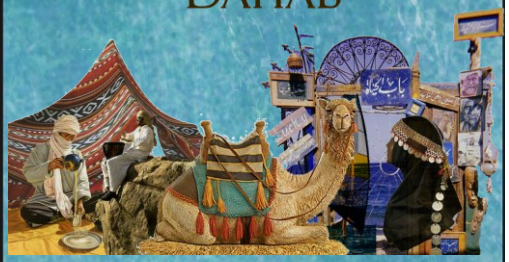

Massive Culture Center in Marrakesh

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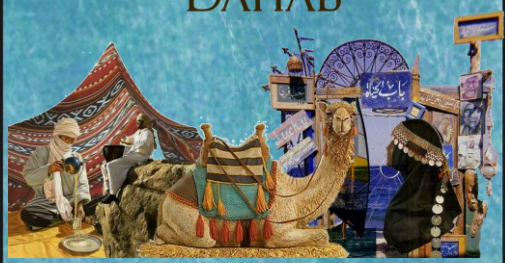
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
-Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7



Massive Culture Center in Marrakesh

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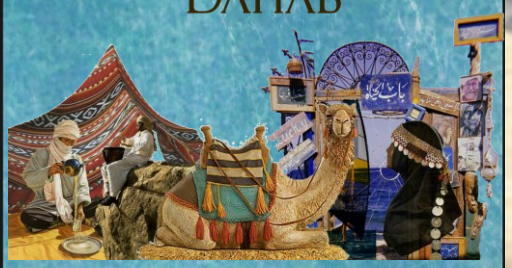
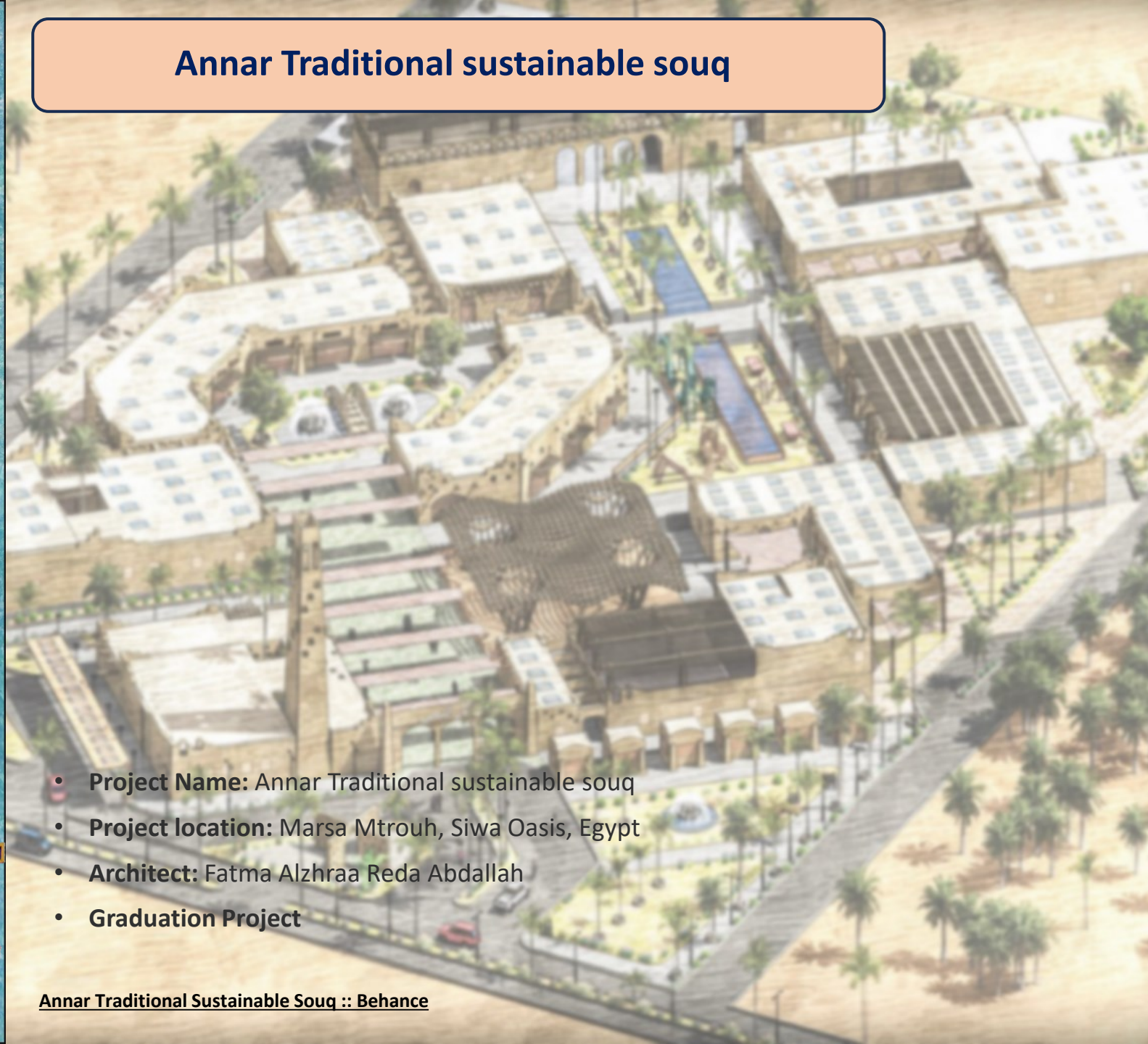
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Annar Traditional sustainable souq



- **Project Name:** Annar Traditional sustainable souq
- **Project location:** Marsa Mtrouh, Siwa Oasis, Egypt
- **Architect:** Fatma Alzhraa Reda Abdallah
- **Graduation Project**

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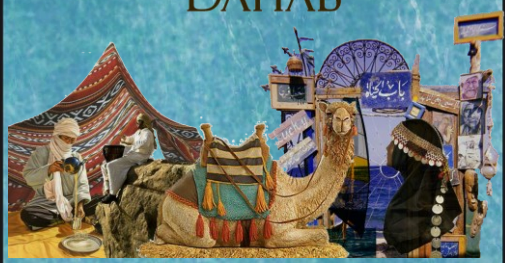
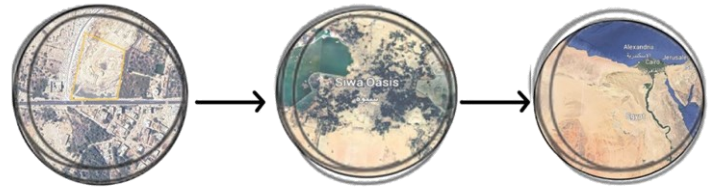
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



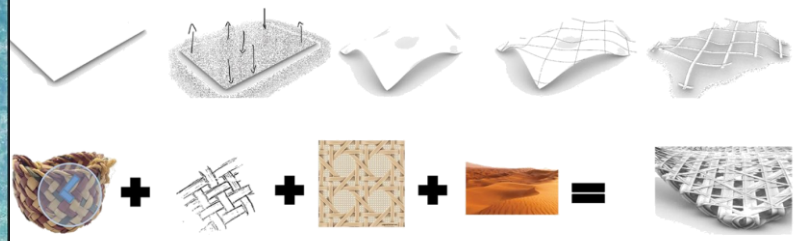
Annar Traditional sustainable souq

الموقع



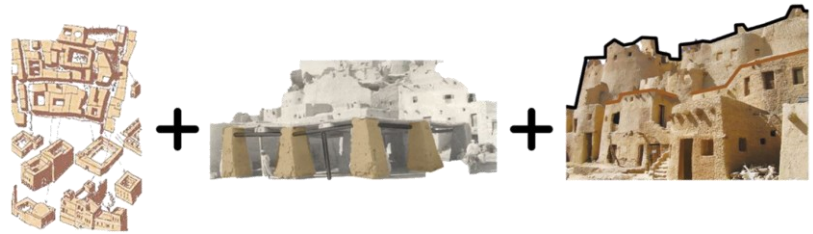
مصر — واحة سيوه — امام جبل الموتي

الفكرة التصميميه للتغطيه



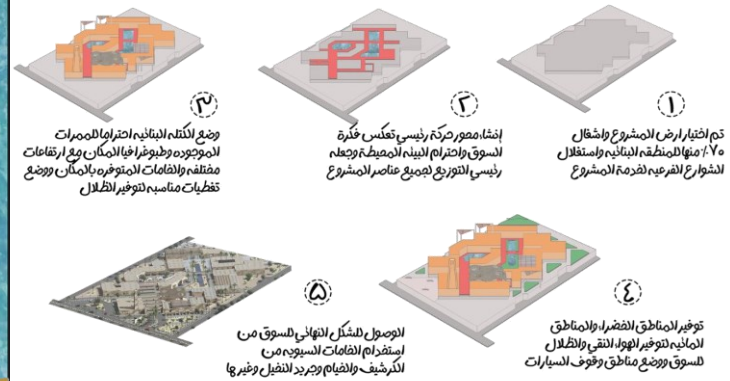
الشكل المبارامترى المستوحى من تراث سيوة، قمنا بدمج أنماط من نوعين من نمط "أوفا" هذه النموذجات مأخوذة من شكل الصحراء، باستخدام أجزاء من الظلال التي تلبي الأرض للإنشاء الجلوس في المناظر الطبيعية

الفكرة التصميميه للسوق



الفكرة التصميميه مستوحاه من عمارة سيوه القديمة وهو الحفاظ علي سياق سيوه والبيئه المحيطه واجراز خطوط الكونتور بالأرض واستخدام نفس خامات البناء واتساع وضيق الممرات

مراحل تكوين الكتله



١ تم اختيار ارض المشروع واشغال ٧٠٪ منها للمنطقه البنائيه واستغلال الشوارع الفرعيه لخدمة المشروع

٢ انشاء محور حركة رئيسي تعكس فكرة السوق واحترام البيئه المحيطة وجعله رئيسي للتوزيع لجميع عناصر المشروع

٣ وضع الكتله البنائيه احتراما للممرات الموجوده وطبوغرافيا المكان مع ارتفاعات مختلفه والفتحات المتوفره بالمكان ووضع تغطيات مناسبه لتوفير الظلال

٤ توفير المناطق الخضراء والمناطق المائيه لتوفير الهواء النقي والظلال للسوق ووضع مناطق وقوف السيارات

٥ الوصول للشكل النهائي للسوق من استخدام الفتحات السيوه من الكرشيف والخيام وجريد النخيل وغيرها

CONCEPT: using the traditional shape of the most used pot “oufa”, and the waves shape of the deserts sand.

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وش تونس
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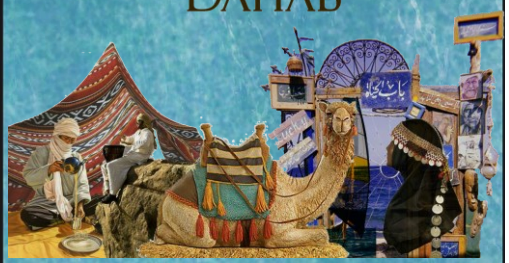
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7



Annar Traditional sustainable souq

الإستدامه

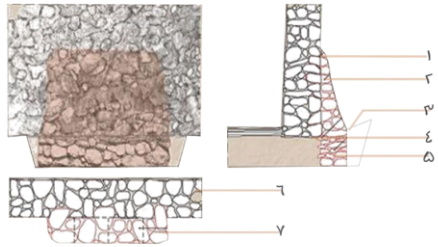
الإجتماعيه

الأقتصاديه

البيئيه

الثقافيه

النظام الإنشائي



الهياكل العمودية - الأبراج

١- انتهاء الكتلة الداعمة
٢- عنصر من الأسنان المصنوعة من الكرشيف
٣- عنصر كرشيف
٤- دريس مصنوع من الحجر الرسومي
٥- ملء الأرض
٦- الحفر في مناطق صغيرة
٧- كتلة كرشيف

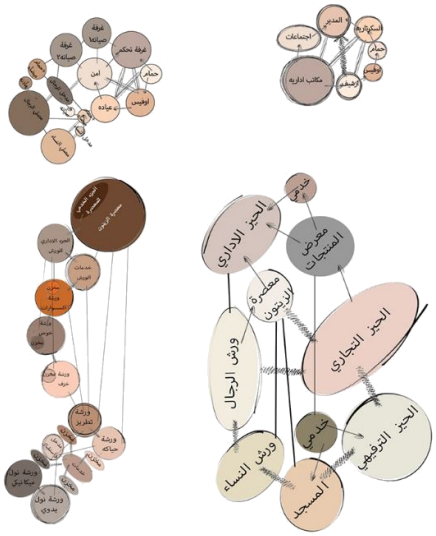
وصف

يشمل التدخل التوسيع المناسب لقسم الجدار من خلال فراغات ثلاثية الزوايا متغيرة العمق الذي يوزع الحمل على سطح أكبر

مراحل التدخل

أ. التنفيذ على مناطق صغيرة من الحفر والقاعدة
ب. تجريد التقوب مفيد لإدخال المدامير إضافة الطابع الشخصي لعجنة كرشيف، مع الانتباه إلى الإلتزام الصحيح بالمدامير

حيزات السوق



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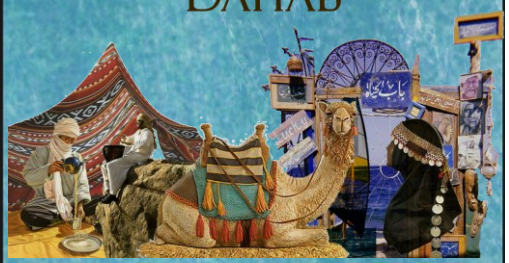
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Annar Traditional sustainable souq

Project component: The project contains five main components:

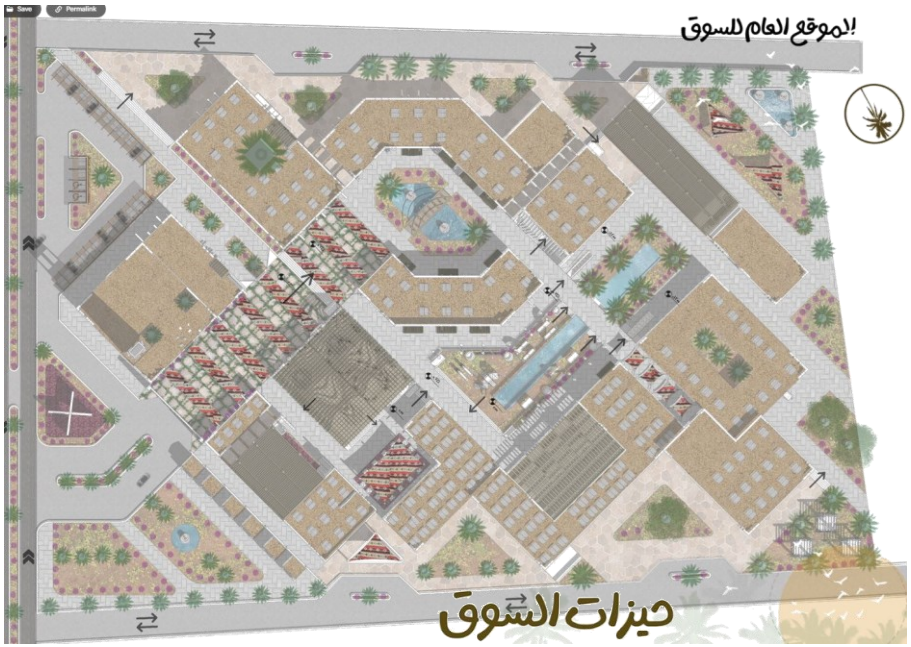
1- Entertainment

2- administrative

3- commercial

4- industrial

5- service



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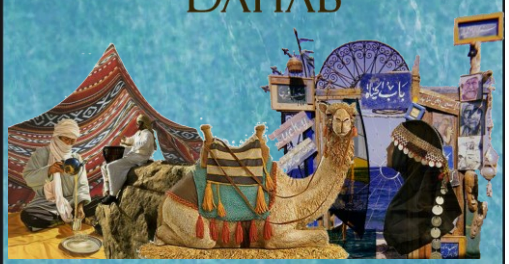
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7



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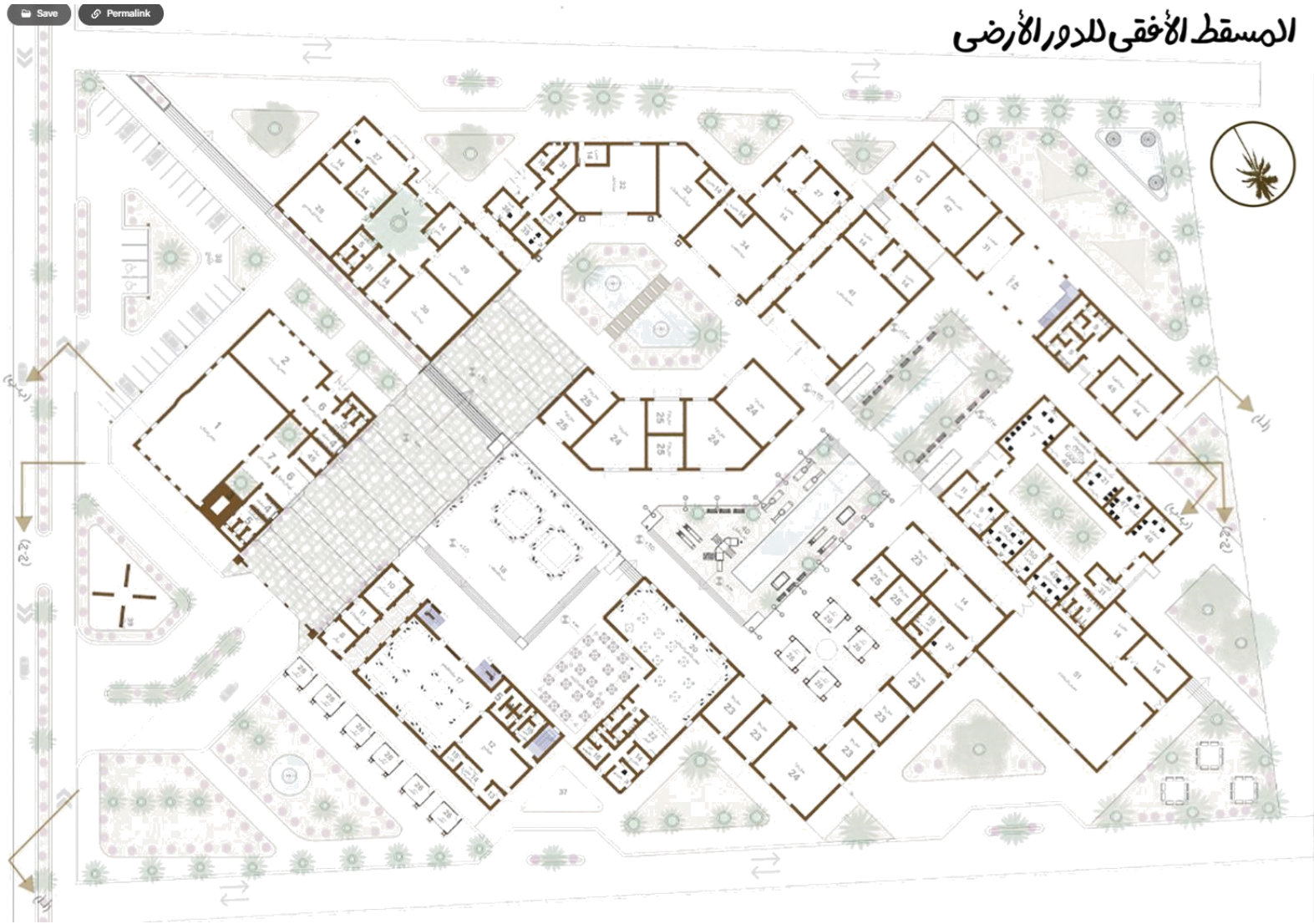

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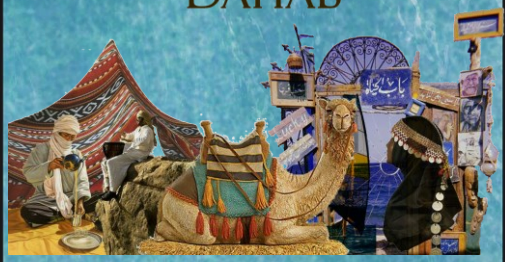
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



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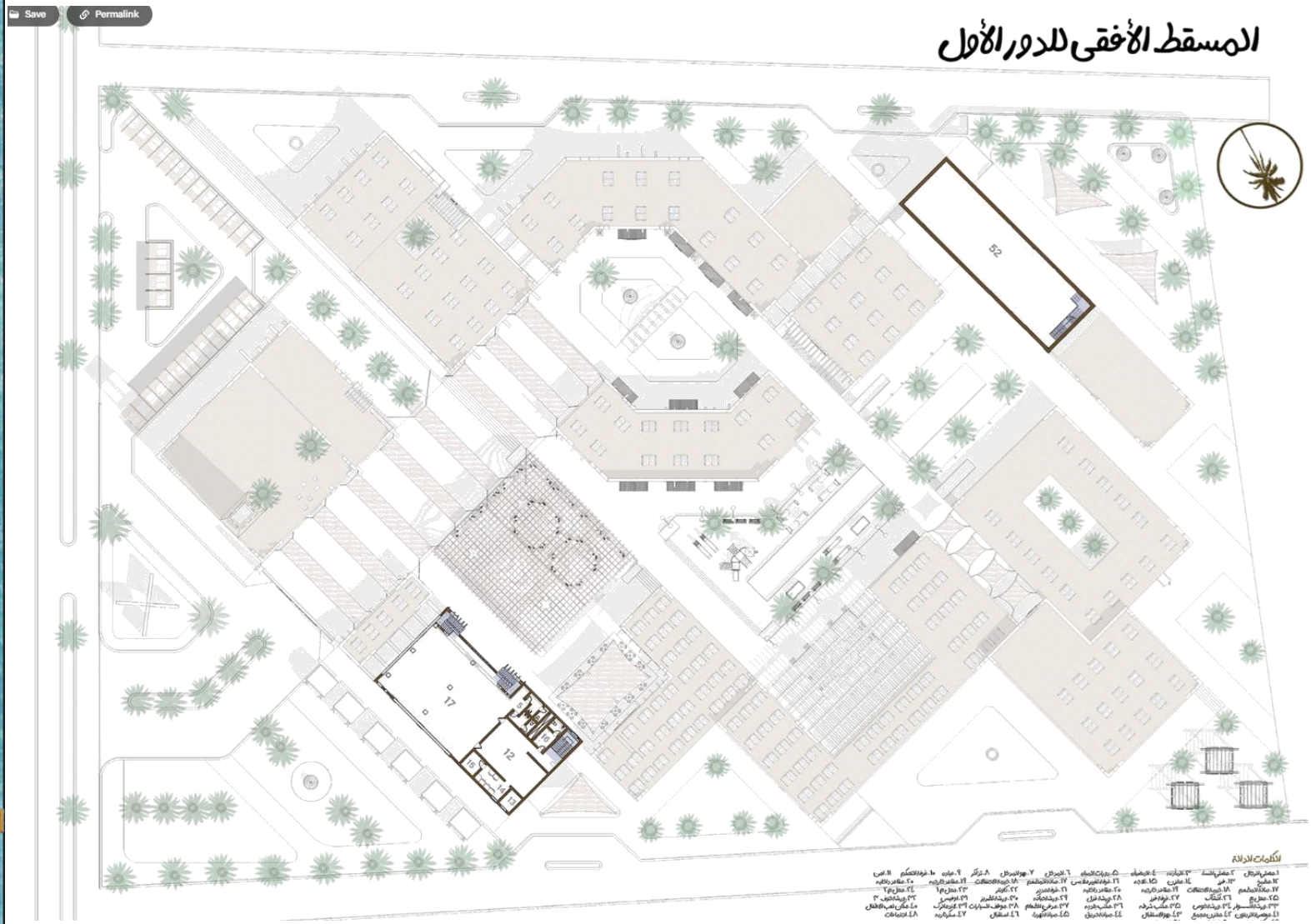

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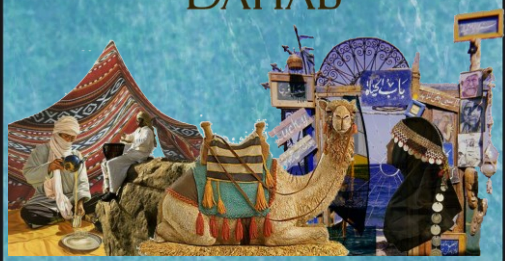
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

دهب
DAHAB



Annar Traditional sustainable souq

الواجهه الرئيسيه للسوق

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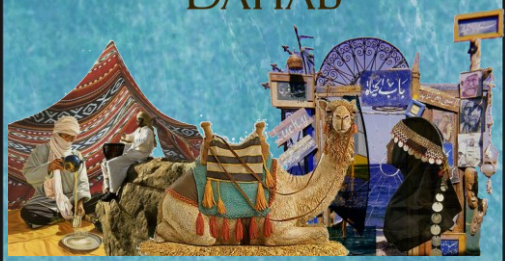
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7



Annar Traditional sustainable souq

الواجهه الجنوبية للسوق

Annar Traditional Sustainable Souq :: Behance

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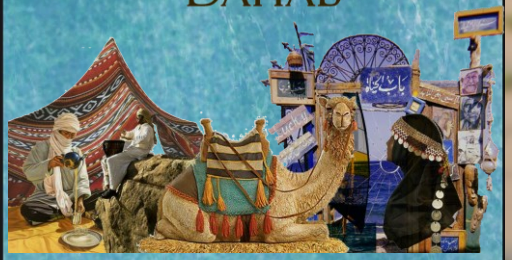
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
DAHAB



Beyond the Limits

- **Project Name:** Beyond the Limits
- **Project location:** Morocco
- **Architect:** _____
- **Graduation Project**

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CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

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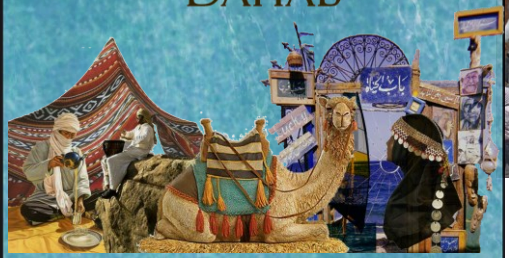
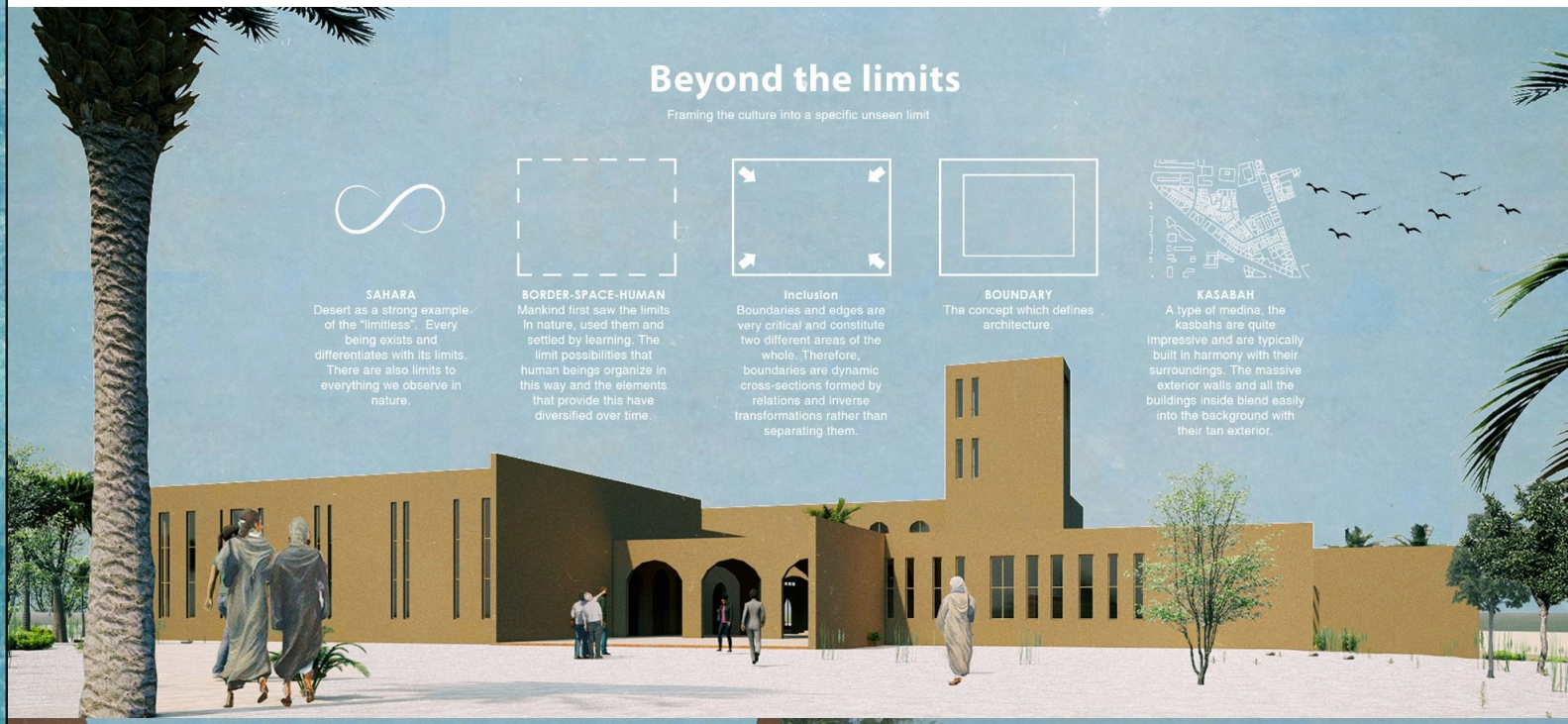


Beyond the Limits


Beyond the limits
Framing the culture into a specific unseen limit
SAHARA
Desert as a strong example of the "limitless". Every being exists and differentiates with its limits. There are also limits to everything we observe in nature.
BORDER-SPACE-HUMAN
Mankind first saw the limits in nature, used them and settled by learning. The limit possibilities that human beings organize in this way and the elements that provide this have diversified over time.
Inclusion
Boundaries and edges are very critical and constitute two different areas of the whole. Therefore, boundaries are dynamic cross-sections formed by relations and inverse transformations rather than separating them.
BOUNDARY
The concept which defines architecture.
KASABAH
A type of medina, the kasbahs are quite impressive and are typically built in harmony with their surroundings. The massive exterior walls and all the buildings inside blend easily into the background with their tan exterior.

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CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
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-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7

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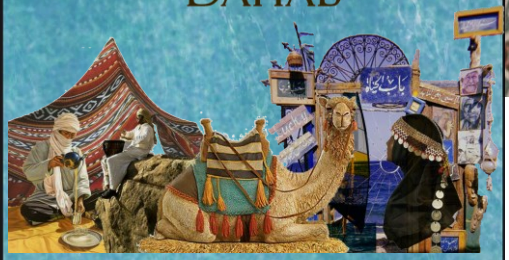

Beyond the Limits

Rendering from the theater

Exterior rendering

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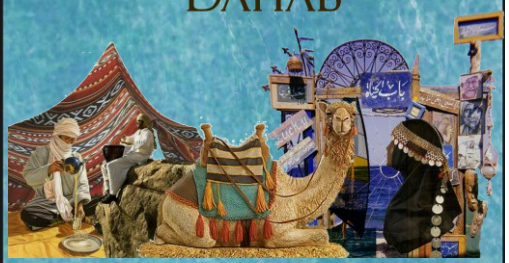
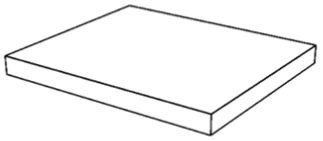
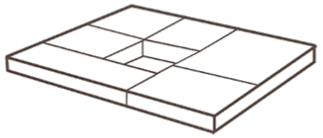
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

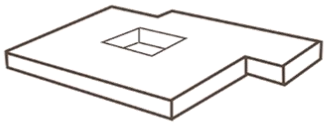


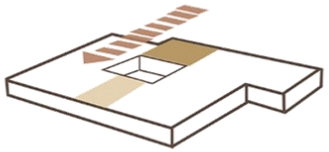
Beyond the Limits

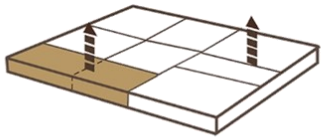
Massing Diagram

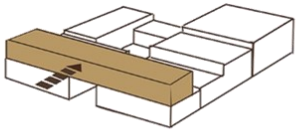

site layout

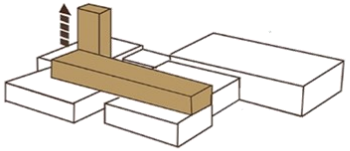

create solid volid relation according to urban texture
void form creates "riad" in the middle of mass

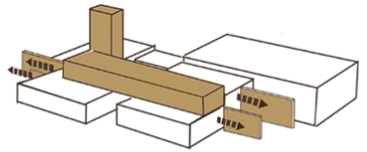

limitation of existing trees layout is designed
without interference with trees


create axis of acess according to oasis
view and wind direction


divide and partially extrude the mass
for spatial needs


height decisions for spatial needs, level
differences and relations between masses


complete silhouette form with wind
catcher and viewing tower as a vertical
circulation element


create limitation with extruded walls

Urban Tissue Analysis

Analysing the Urban tissue in Agfay - the nearest
settlement to our site. Narrow streets, organic
texture and massive masses are clearly seen.

Although each building has its own original
identity, there are some common characteristics
such as the courtyards, Rwaq, Riad.

Macro scale approach

As our site is far from its nearest settlements, it had to integrate a lot of facilities and become self-sufficient to act like a haven in the Oasis

MARRAKECH-SITE	AGAFAY-SITE
43 MIN	30 MIN
1H 22MIN	-

1

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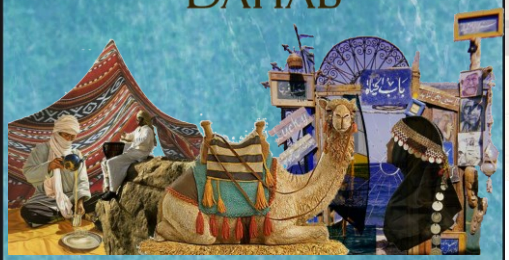
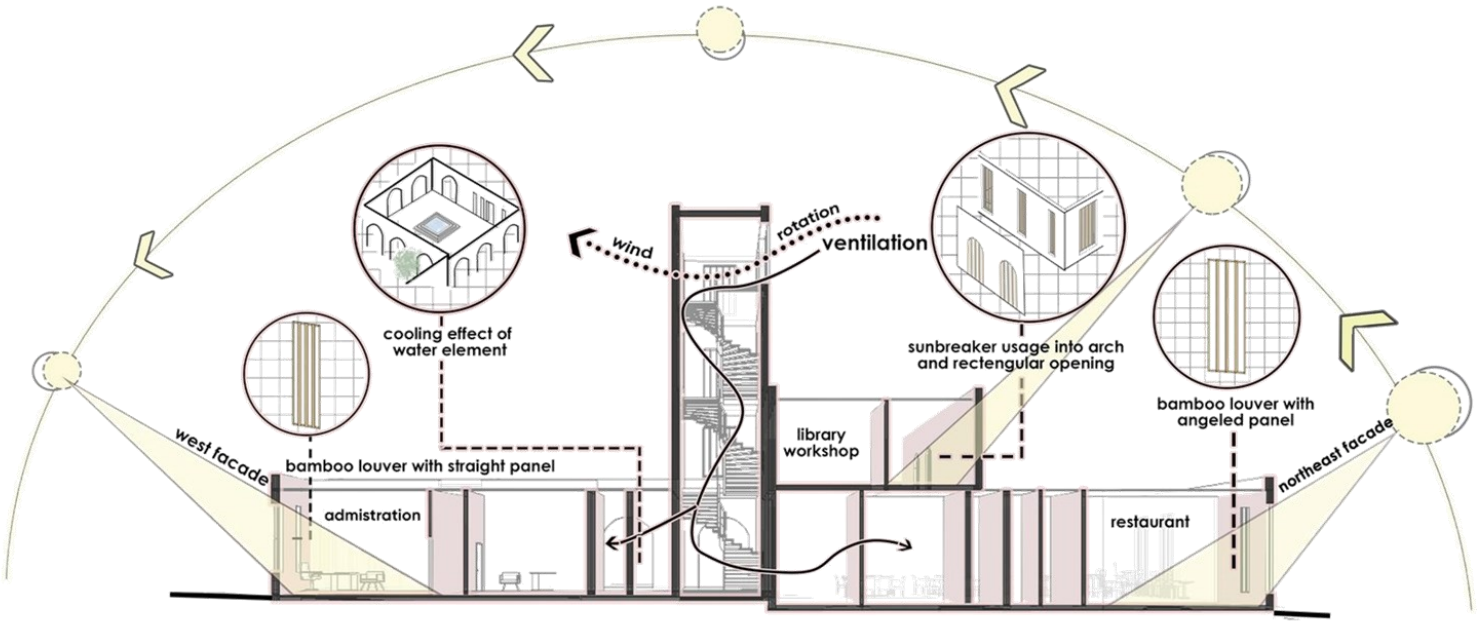
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Beyond the Limits

SUSTAINABILITY DIAGRAM



EAST ELEVATION

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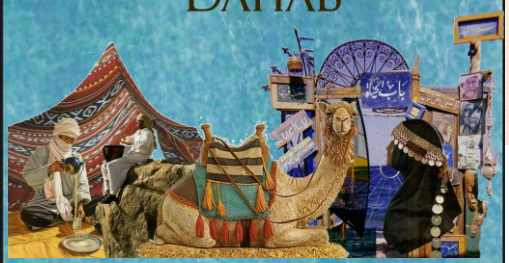
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

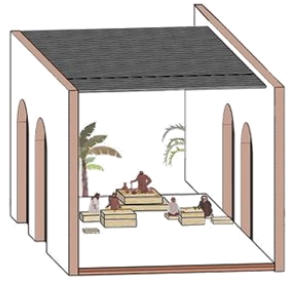


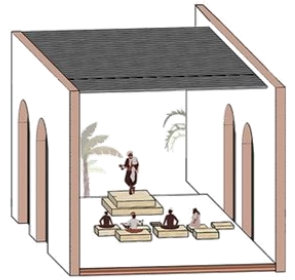
Beyond the Limits

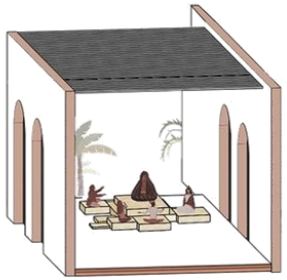
SCENARIO DIAGRAM

open common areas are designed with ecological materials. areas consist of many activities in moroccon traditional nights. bamboo elements are used as seats and tables. bamboo roof covering preserves effects of sunlight. on the floor, rammed earth material is used due to sustainable design and positive effects of earth texture.

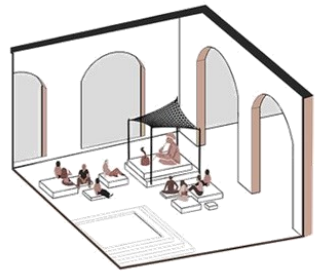
The scenario was created to accommodate various events which reflects the essence of the Morrocan traditional festivals such as Friday night activities.
The spaces elements are flexible to be able to host different events according to the potential activities. They are also easily accessible from the courtyard.

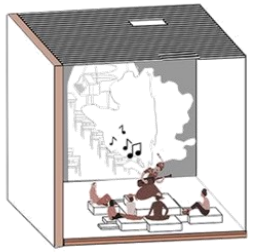

traditional tea night


story"hakawaty" night


fortune telling

moroccon traditional bazaar


snake and monkeys show


gnawa music conservatory

SOUTH ELEVATION

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CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

ذهب
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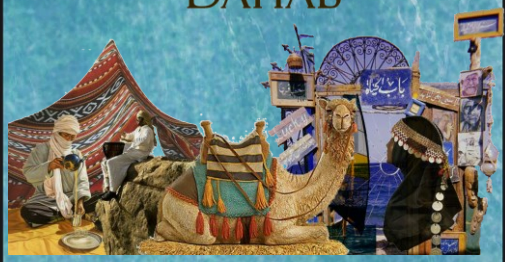
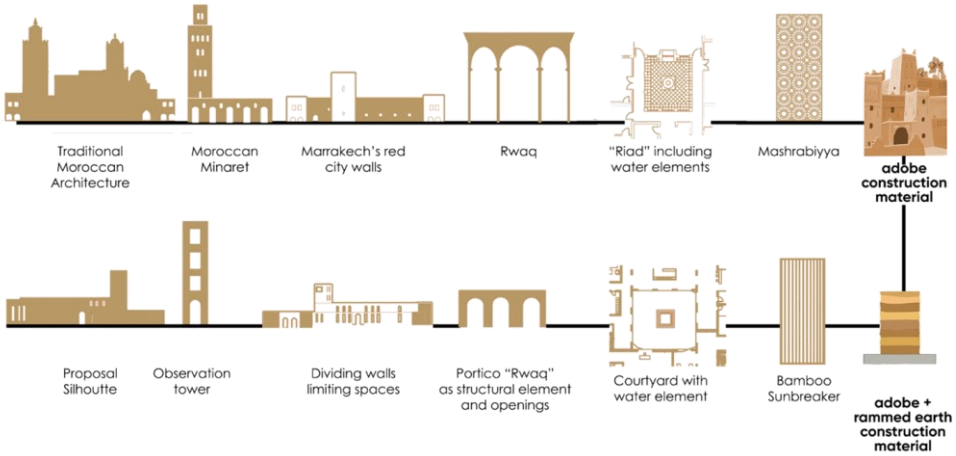


Beyond the Limits



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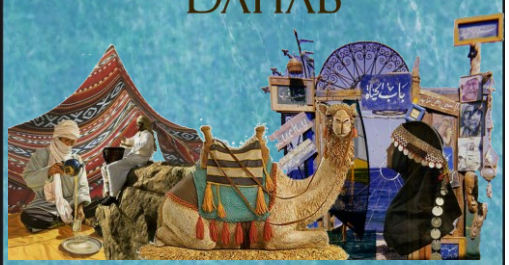
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Beyond the Limits

Section A-A

Section B-B

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CHAPTER 1
CHAPTER 2
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CHAPTER 4
-Sangan Hotel
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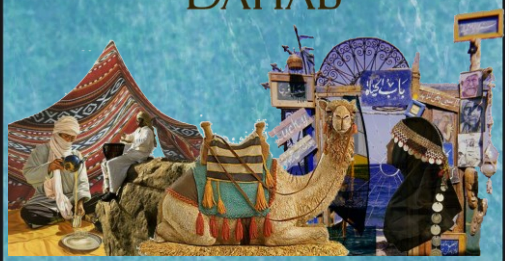
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



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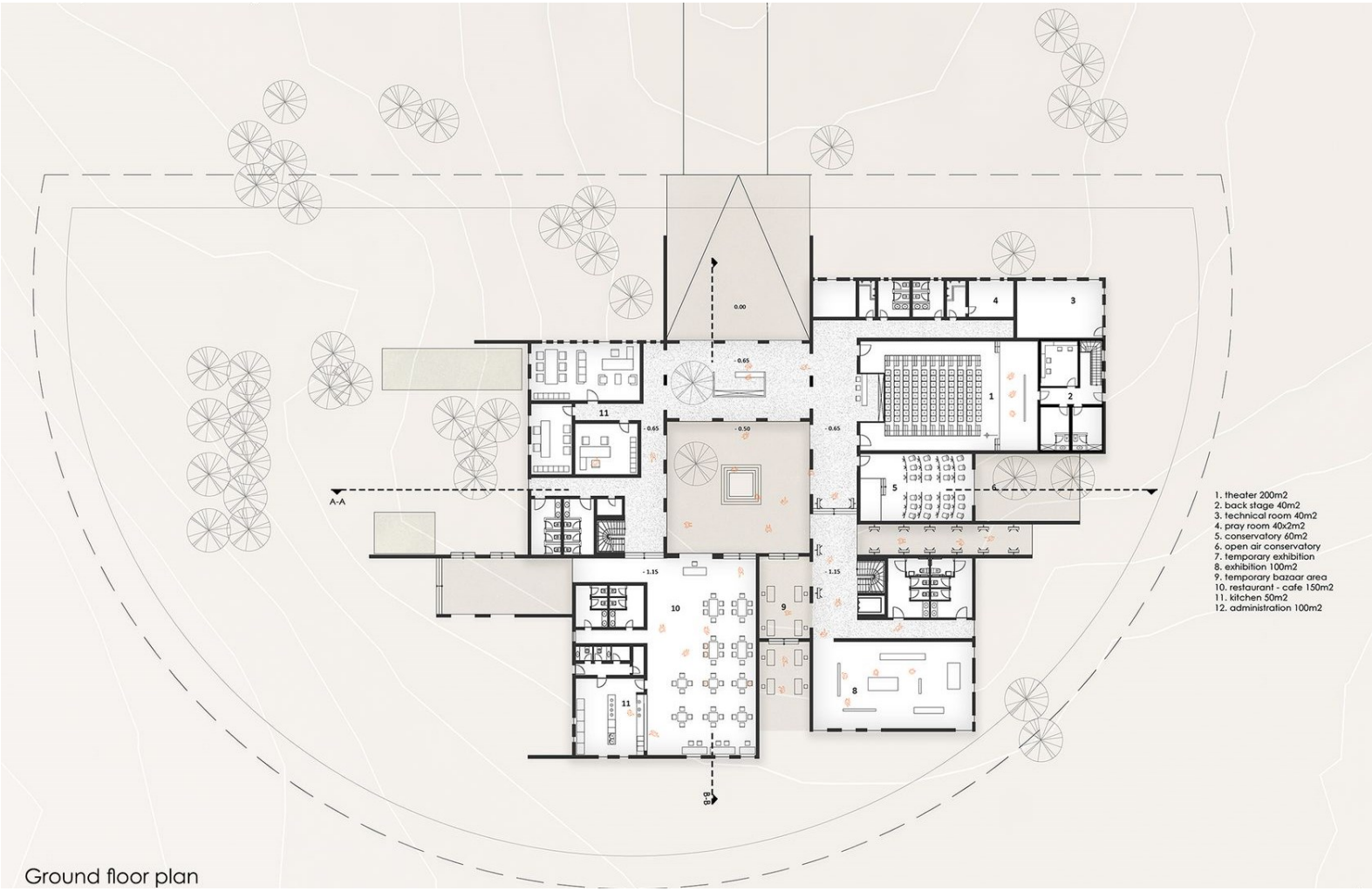

Ground floor plan

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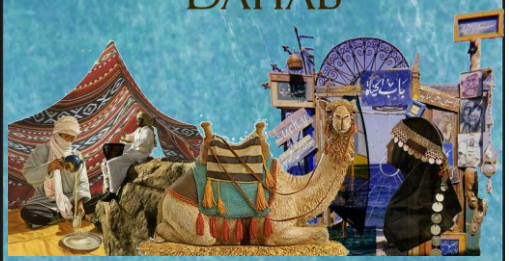
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



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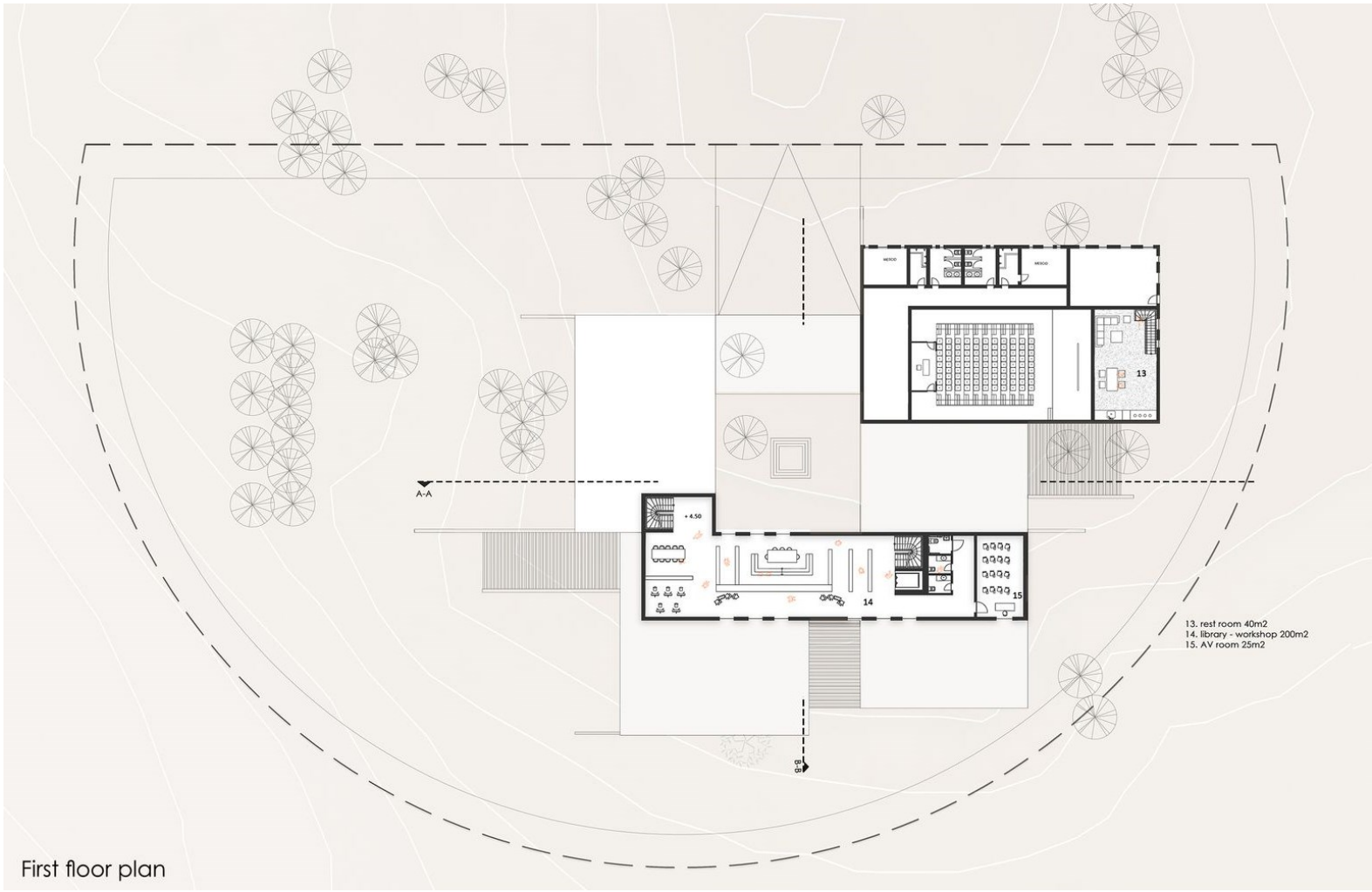

First floor plan

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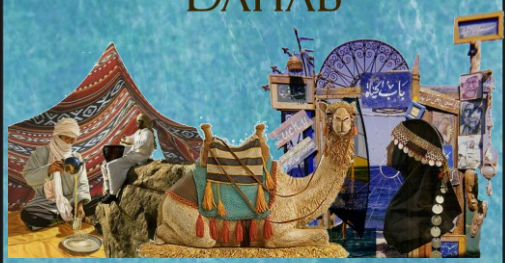
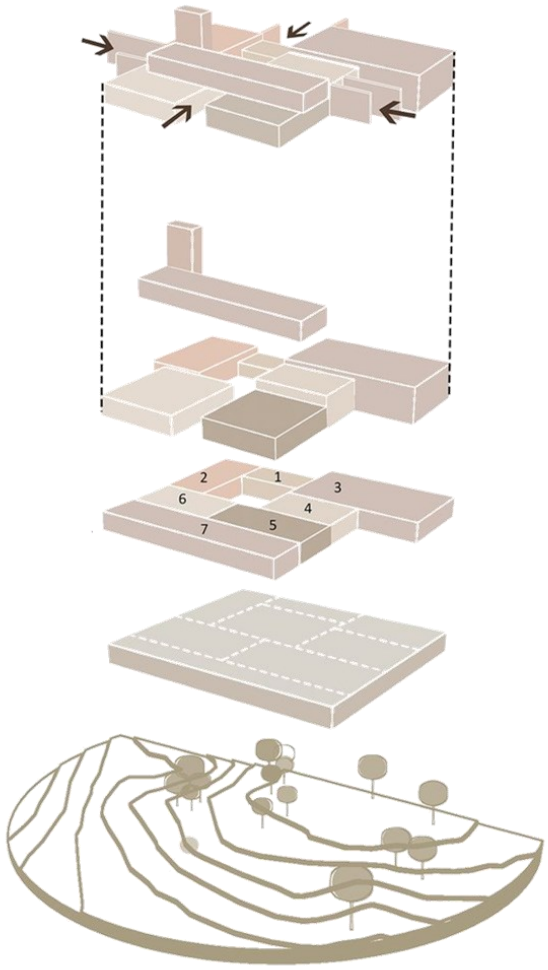
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



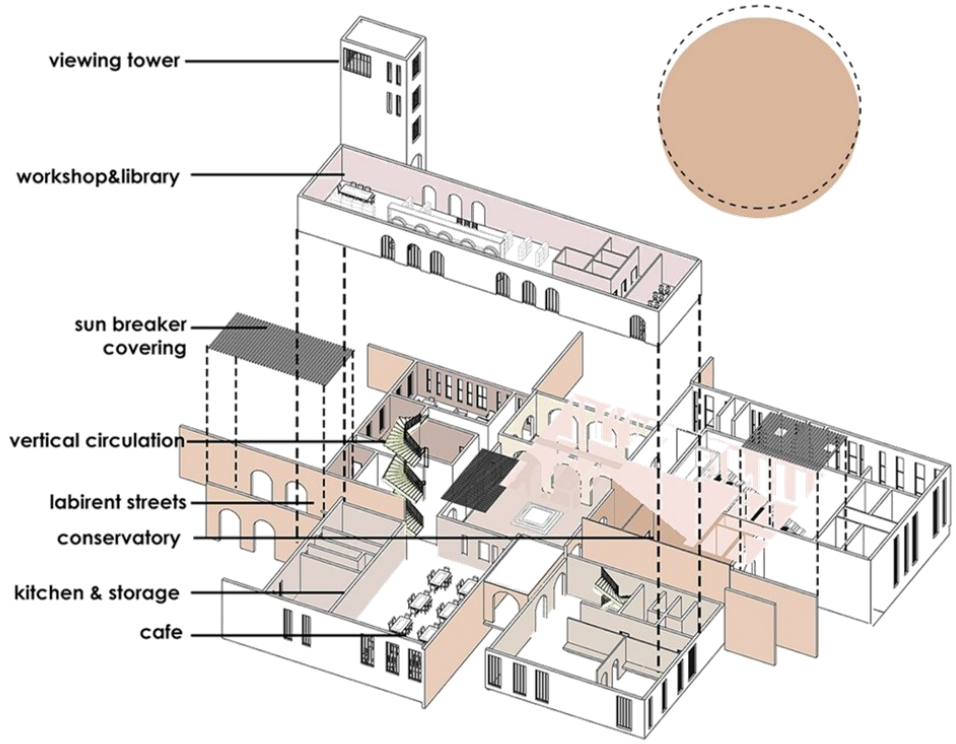
Beyond the Limits

PROGRAM DIAGRAM



1. entrance
2. admistration
3. theatre
4. conservatory
5. exhibition
6. cafe/restaurant
7. education

FUNCTIONAL DIAGRAM



GROUND FLOOR

- theater 200m2
- exhibition 100m2
- restaurant 150m2
- conservatory 60m2
- administration

WC 25 m2x4

prayer room 40m2x2

storage 40m2

UPPER FLOOR

- viewing tower
- library
- workshop
- AV room

200 m2

WC + Storage 30 m2

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
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-Massive culture center
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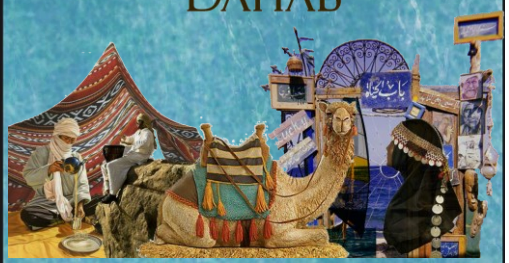
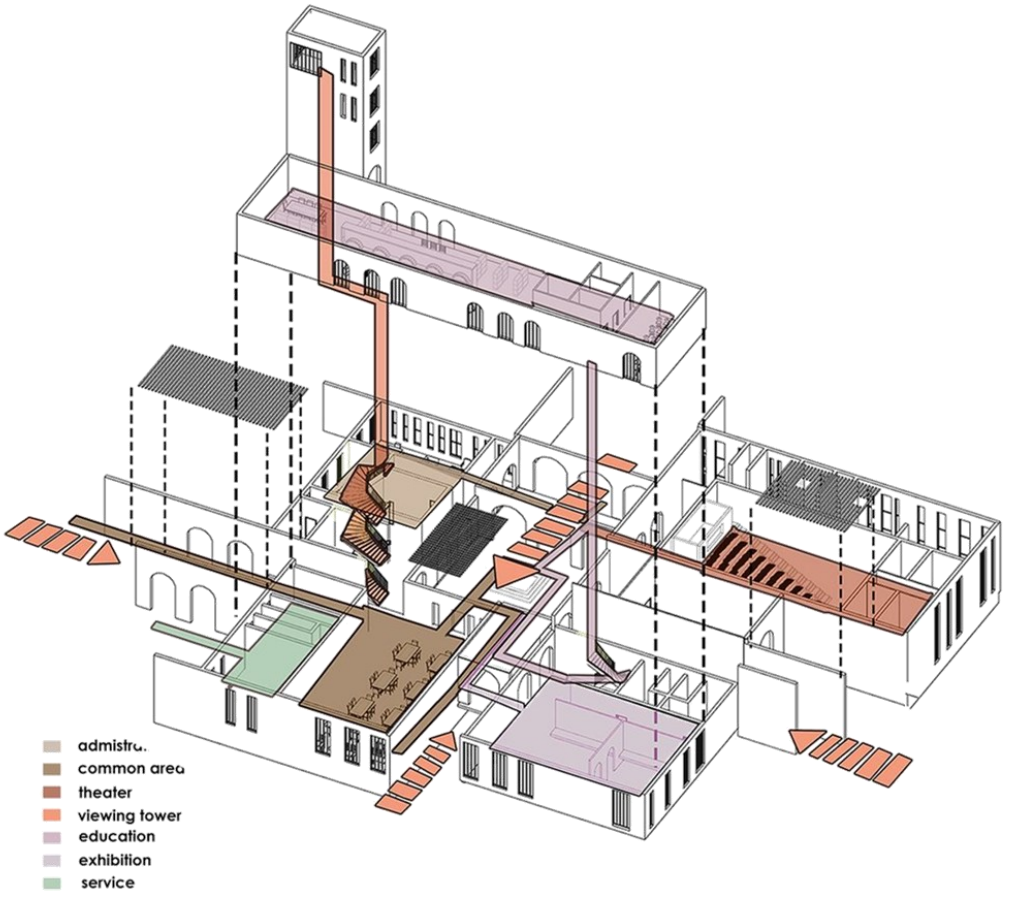
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Beyond the Limits

CIRCULATION DIAGRAM



Material Pallete

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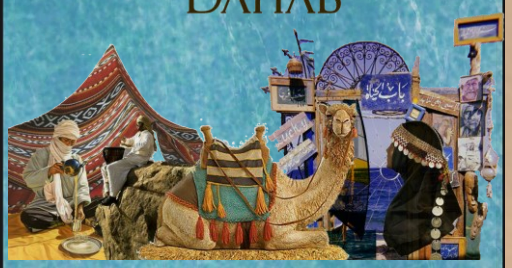
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre

- **Project Name:** Palm centre
- **Project location:** Oasis, Egypt
- **Architect:** Youssef Ahmed
- **Graduation Project**

https://www.behance.net/gallery/161845593/Graduation-Project-Craft-CentrePalm-Craft-Oasis-

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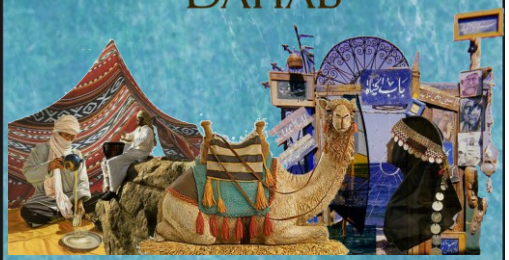
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre

Project Challenges

Problem
-Unemployment and internal Migeration
-Crafts depending on Palm Trees are being disappear by time
-Lake in Education

Aim
-To enhance Work Environment to reach highly Efficiency and productivity
-To Provide Visitores with unique Experience
-To highlight Building integration with Nature and how People interact with them

Objectivies
-Giving the Visitors a chance to try the Craft -making experience by themselves
- Providing Spaces where Visitors can Overlook Workshops
- Creating Links between Massrs to Activate it

Goal
-Marketing for the City through Utilizing it' s potentials which helps in increasing the local income of City to improve the quility of life
-The Project aims to be a tourist destination for one day Journey in the City

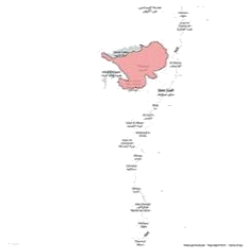
Site Analysis

Project Location

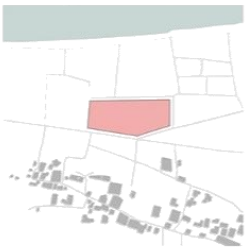
Project Land

Located at Nourthern of Upper Egypt Region

Marakaz Yousef-Elsedeek



El-Fayom Governorate



Tunis village

Project Location

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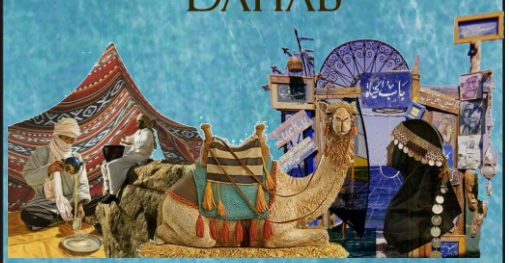
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre

Why Palms Tree ?

Palm Tree besides produsing the dates its has many uses in crafts every single part of it can be used in many crafts so the project gathering the main 3 crafts can get from the palm and put them in a tourist Village as Tunis Village which was famous with Clay Crafts By these converting these Village into a Crafting Village With a lot of Crafts

Users
Craft men
Tourists
Students
Administrat-ion Staff
Visitors From City
Furniture craft
Step 1
Picking the Leaf from Palm Trees then Pruning it
Step 2
Cleaning the Leaf with Water then cutting it in suitable sizes
Step 3
The manufacturing process begins manually by using the suitable screws to make Products as Tables Chairs and Beds
Sculpture on Leaf
Step 1
Picking the Leaf from Palm Trees then Pruning it
Step 2
Cleaning the Leaf with Water then cutting it in suitable sizes
Step 3
The Sculpture on Leaf use Part in Palm called Kernaf El -Nakhel which is the Worker Start work on it
Wicker craft
Step 1
Picking the Leaf from Palm Trees
Step 2
Putting it in the sun to dry for one Day in Summer & 3 Days in Winter
Step 3
Cutting it after drying to the suitable size needed for each Product
Step 4
Craftmac start to sew it with different forms of knots then pigment it with specific dye

Palm Tree Crafts

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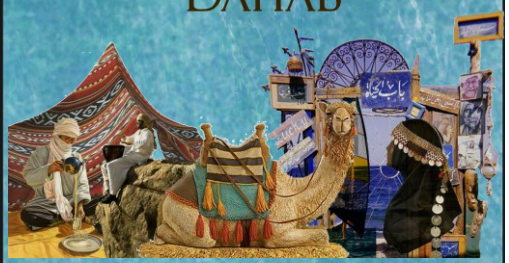
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre

Why these Site ?

Location

-Elfayom has 1,200000 Palm Trees which is used in Craft

-Tunis Village is an Attracted Area for Tourist from all around the world which interested in hond made Works

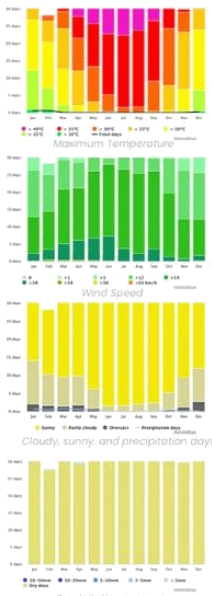
Reviving Palm Crafts

-Reviving the Crafts Depending on palm Trees due to Immigration of Citizen to find new Works with more profit

Cultural Aspect

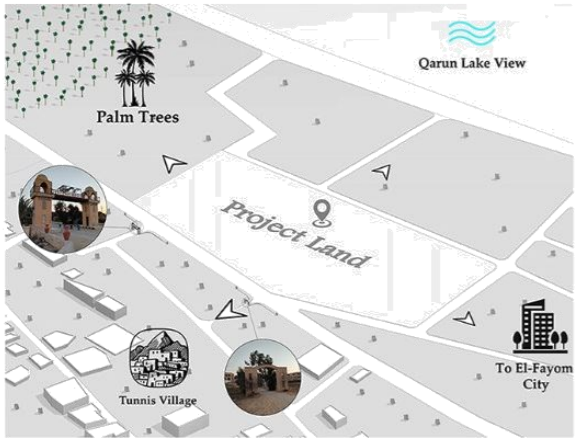
-The Citizens in The City are Directed Towards Small Industries Which drive them to build Small Projects to themselves

Weather and Surrounding Analysis



Weather Analysis

Climate digram



Surrounding of the Site

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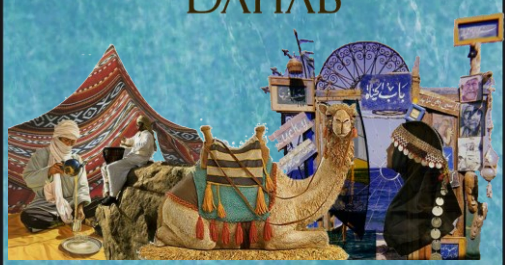
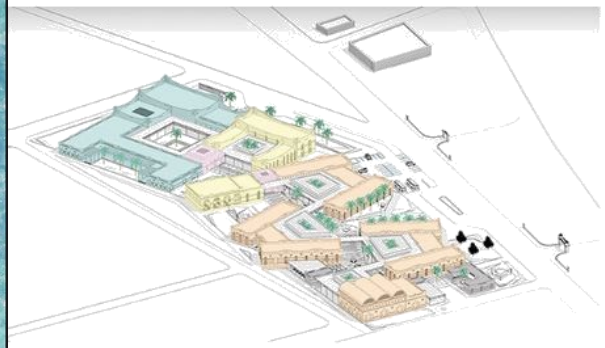
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



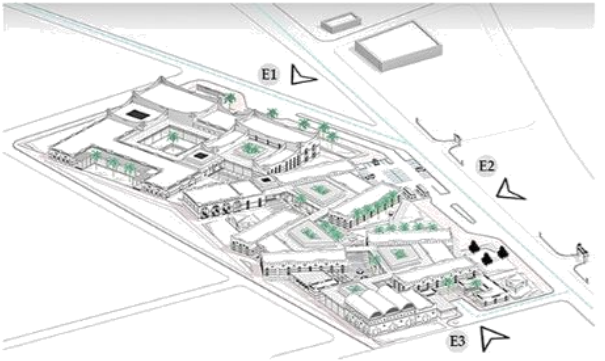
Palm centre



Zoning Digram

Structure system

Circulation Digram



Accessibility Diagram

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7

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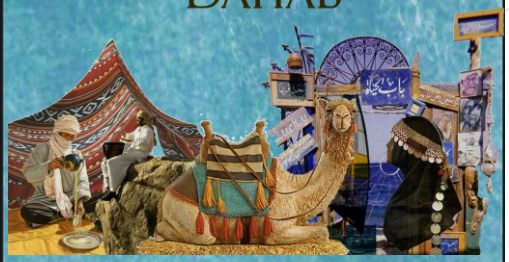
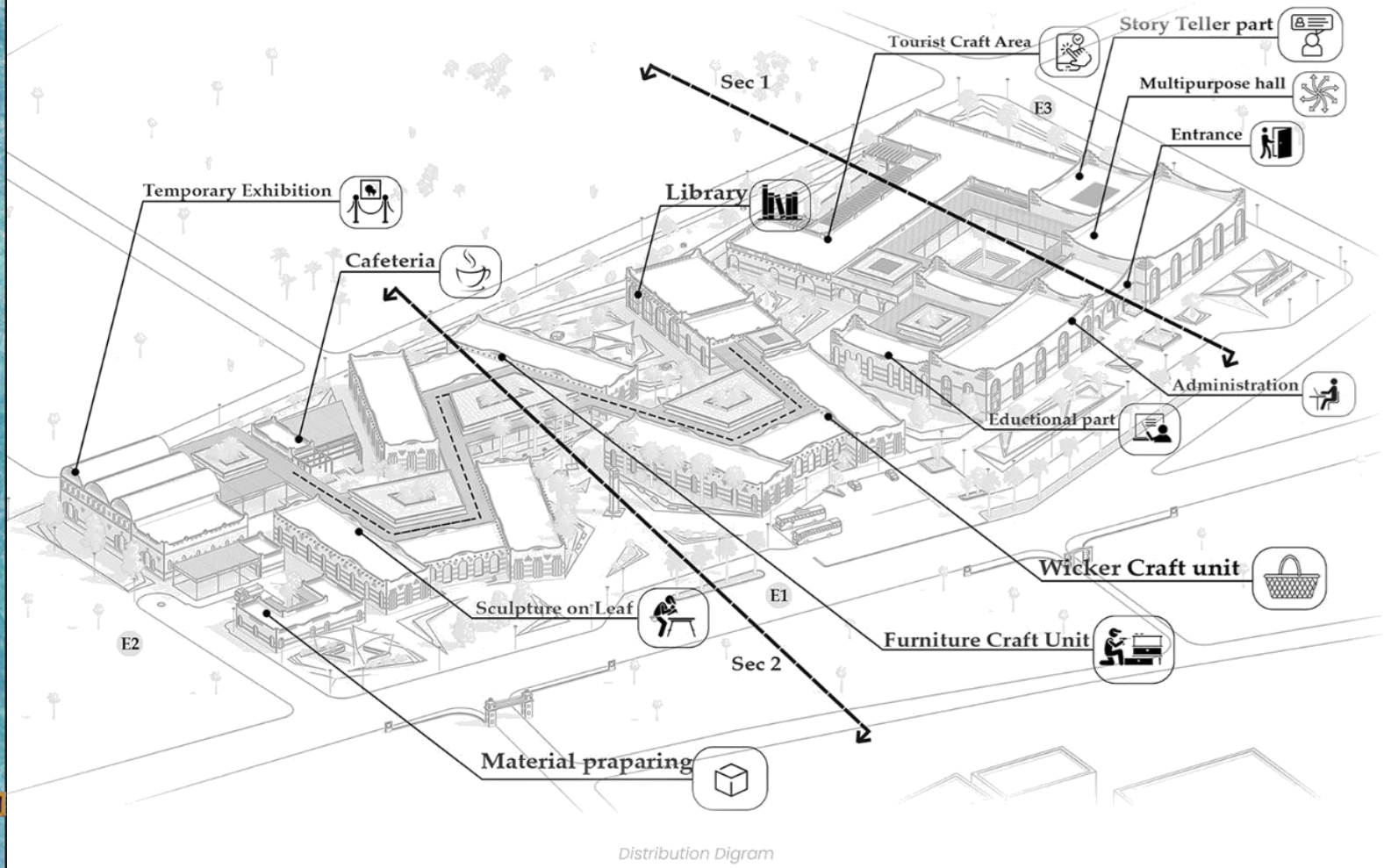


Palm centre



Distribution Digram

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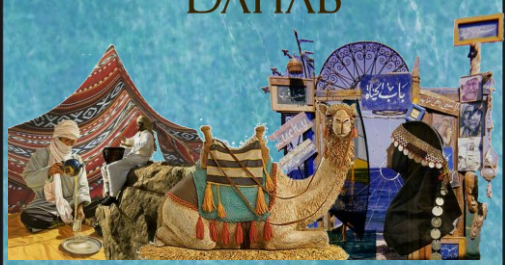
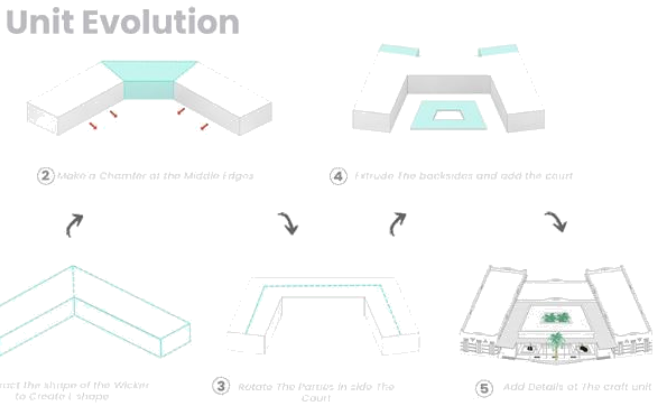
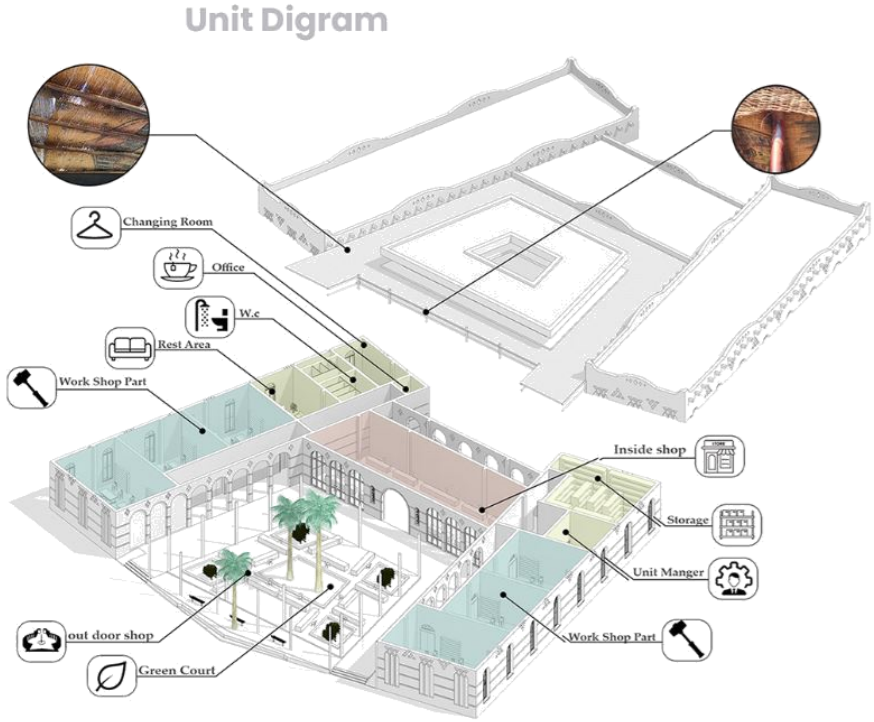
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre


Unit Evolution
2 Make a Chamfer at the Middle Ridges
4 Extrude The backsides and add the court
1 Instruct the shape of the Wicker to Create L Shape
3 Rotate The Parties In side The Court
5 Add Details at The craft unit



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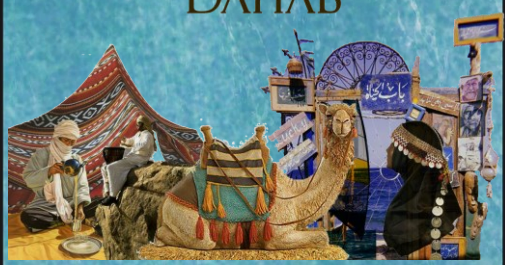
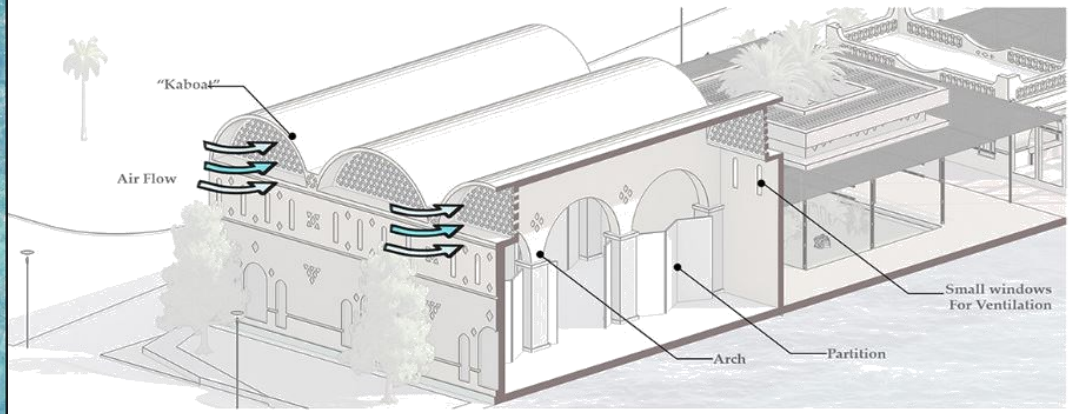
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre



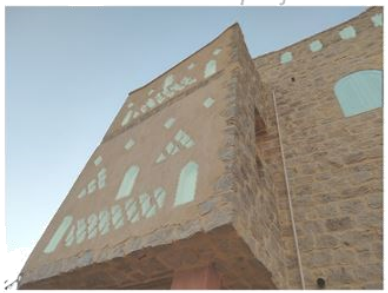
Exhibition Ventilation and Lighting Digram

bambo Wood Mud Wicker

Materials

Used Sastanble Materials leads to far less waste than other types of materials

Using bambo as light structure to shade the project



Adding Patterns And Elevation Style of Tunis Village

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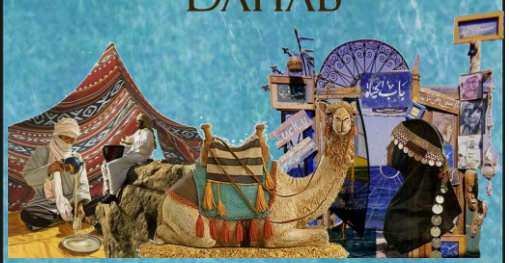
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre
CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre

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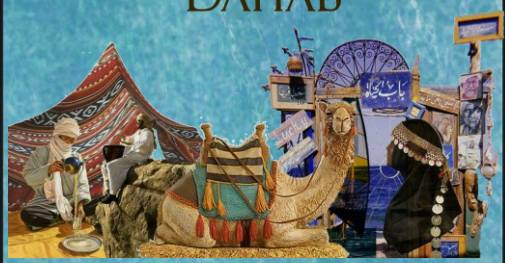
وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
-Sangan Hotel
-Massive culture center
- Annar traditional souq
- Beyond the Limits
- Palm Centre

CHAPTER 5
CHAPTER 6
CHAPTER 7



Palm centre

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CHAPTER 5

- **General and Detailed Design trend**

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
-General and Detailed Design trends
CHAPTER 6
CHAPTER 7

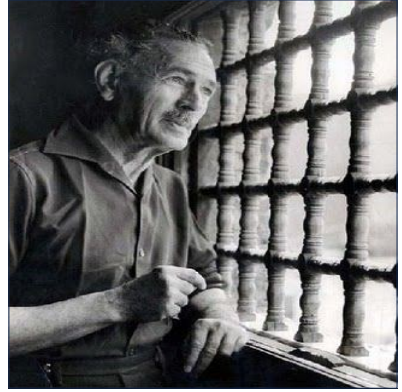
General and Detailed trend

Hassan Fathy

The international Egyptian architect Hassan Fathy is considered one of the most important pioneers of architecture in the twentieth century, as he had his own idea and distinctive philosophy that raised him to the level of leadership in the world of architectural and construction knowledge.

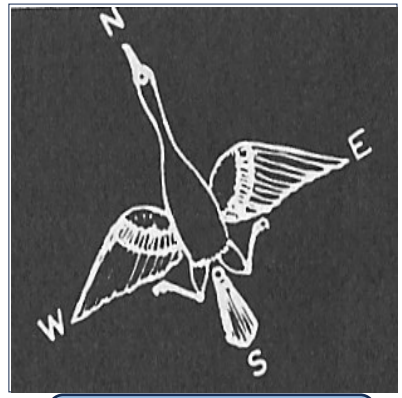
In light of the tendency of architects around the world to achieve the concepts of modernity and universal design that is suitable for all times and places, which led to the loss of local architecture to lose its identity so that the building in Europe became the same building in India and Egypt, and in light of the blind imitation by architects in Egypt of international architecture, Hassan Fathy broke all these trends and dived into the depths of the Egyptian environment and the depths of the Egyptian person to come out to the world with new thinking and new names such as: **"The Architecture of the Poor"** and **"Terracotta Architecture"** and his ideas became the nucleus of what was later known as "Environmental Architecture".

But Hassan Fathy's ideas did not come out of nowhere, but rather a revival of architectural concepts that have been applied in Egypt for thousands of years, and in a clearer sense since the ancient Egyptian civilization. Architecture in this great civilization emerged from the surrounding environment, and buildings, whether temples, residences or others, succeeded in achieving full compatibility with the environment and addressing climatic issues by using architectural elements that are now considered the basics of ecological architecture, such as: **The inner courtyard**, **the air filter**, etc. Hassan Fathy also revived Islamic architectural elements and used them in his works such as**: Mashrabiya**, **Takhtboush** and others. He was able to masterfully blend these two civilizations to create distinctive buildings.



Hassan Fathy

New Barrid Village



Hassan fathy's signature north arrow

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WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
-General and Detailed Design trends
CHAPTER 6
CHAPTER 7

General and Detailed trend

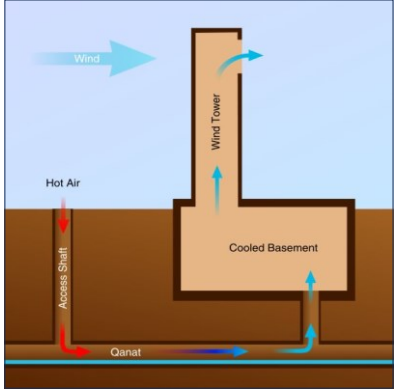
The most important architectural elements revived by Hassan Fathy:-

Architectural vocabulary in ancient Egyptian architecture:
- Inner courtyard
- Air server
- Dome and Vault
- Mudbricks
- How architecture relates to the environment

Architectural vocabulary in Islamic architecture:
- Takhtbush
- Inner courtyard
- Air server
- Mashrabiya
- Archs
- Dome

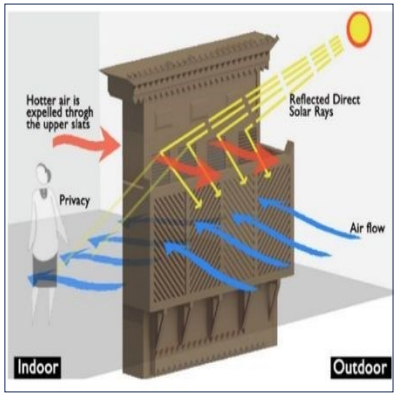
Impact of climate on architectural form:

For example, the ratio of window area to wall area decreases as we approach the equator. In warm regions, people avoid the glare and heat of the sun and this is reflected in the decrease in the area of windows, and in subtropical and tropical regions, the changes related to the architectural form and needed to solve the dilemmas that result from excessive heat are more obvious. In Egypt, Iraq, India and Pakistan, there are deep **roofed courtyards**, **prominent balconies** and **roof overhangs** that cast long shadows on the walls of the building, and **large openings are filled with wooden** and raw grilles that reduce the glare of the sun and allow the breeze to pass through them. Add to that the use of **sunscreens**



Air server

Takhtbush



Mashrabiya

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CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
-General and Detailed Design trends
CHAPTER 6
CHAPTER 7

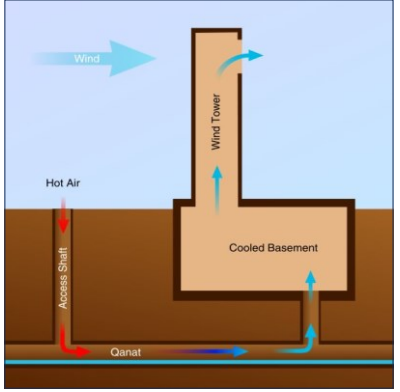
General and Detailed trend

Architecture and ambient comfort:

In the design and planning of hot, dry, warm and humid regions, the architect faces two vertical dilemmas: **providing protection from heat and providing adequate cooling**, and **the sun, which is the main source of light and heat for the earth**, forms the secondary climate elements of wind and humidity that affect the human physiological spirit, and the built environment also causes changes in the local climate, as it affects the way buildings are distributed and their orientation in relation to the sun and their formation in space in creating a local climate specific to each site. In addition to this, the **effect of construction materials**, their **external appearance**, the **colors of exposed surfaces and the way exposed places** such as streets, courtyards and gardens are designed, and the interaction between man-made features on the face of the earth and the natural microclimate leads to the emergence of those factors that affect human comfort in relation to the following factors of the built environment:

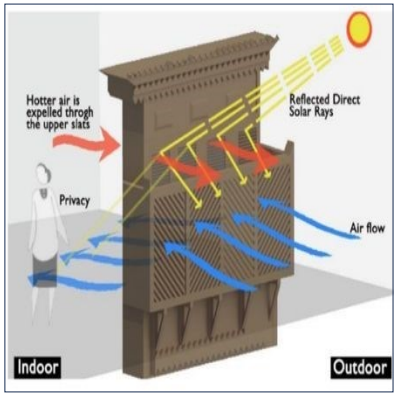
Light, Heat, Wind, Humidity.

There is no doubt that some distributions create better climates than others, and each site has a better spatial configuration that the designer must discover and use as a standard reference in order to make appropriate design decisions.



Air server

Takhtbush



Mashrabiya

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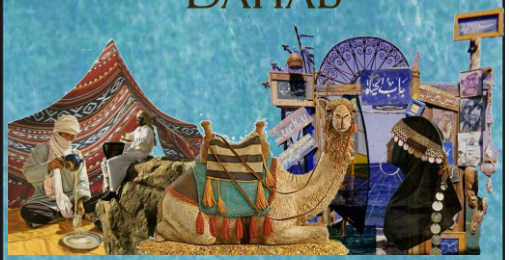
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
-General and Detailed Design trends
CHAPTER 6
CHAPTER 7

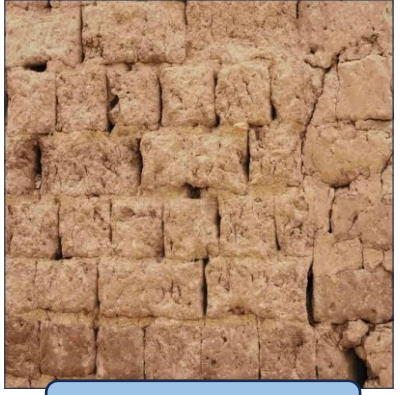


General and Detailed trend

Construction materials:

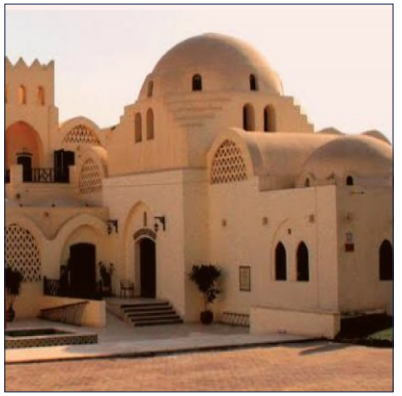
Hassan Fathy called for the use of local building materials, "Look under your feet and build." He also called for the revival and development of traditional building methods as an environmentally friendly technology for economic, social, and cultural reasons. In particular, he focused on raw **Mudbricks** as an essential material for the reconstruction of Egyptian rural villages and from the child to the reconstruction of desert villages and hamlets.

He saw that the materials surrounding the building's occupants are very important to provide protection from heat and cold, and that great care must be taken in choosing materials for walls and ceilings and their thickness, so that they match their physical properties in terms of thermal conductivity, thermal resistance, and light reflection. It is worth noting that **soft bricks** withstand the compression efforts that are limited to them in the walls, but they cannot withstand the tensile and bending efforts that the flat roof is exposed to, which requires the use of materials such as wood, iron and others. Reinforced concrete. The practical and technical solution to this obstacle was to make **vaulted ceilings**, which limited the stresses on the basement shell to compressive stresses, thus making it possible to use adobe bricks in the ceiling as well as in the walls

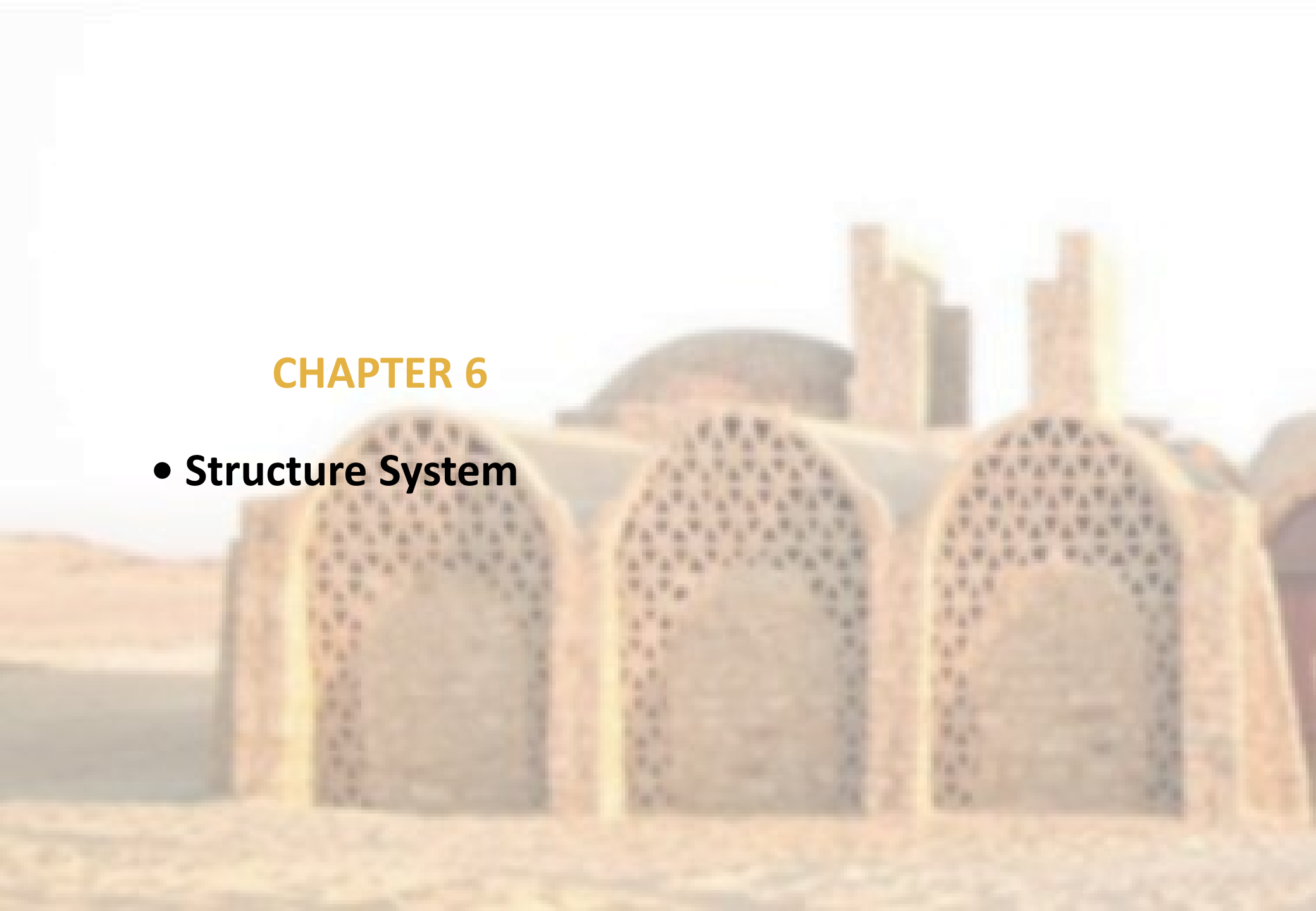


Mudbricks

Soft Bricks



Vaulted ceiling



CHAPTER 6

- **Structure System**

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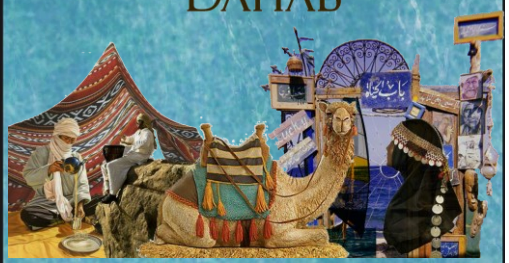
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7



Structure System

Clay constructions

Clay Material:

The soil is what clay buildings are built from and is extracted from the surface crust of the earth and is made up of :

- Small stones and represent the largest component (2 to 20 centimeters).
- Sand and gravel (2 mm to 2 cm).
- Sand (60 fractions of a millimeter to 2 millimeters).
- Organic matter (2 millimeters to 60 millimeters).

Clay, which is made up of fine soil particles that are difficult to see with the naked eye and represents the smallest percentage of the soil.

The reasons for the use of this material are due to the following:

- Available in abundance
- Can be recycled
- The implementation process does not consume energy
- It has been used for thousands of years in Chile, so it is very familiar to them
- easy to use
- It has good thermal properties

This material was widely used in ancient Egyptian architecture, especially in residential buildings and temples in its prototypes. In the prototypes of the **ancient Egyptian dwelling**, the dwelling was an **oval or round-shaped** but built from an interlocking fence covered with a layer of mud mixed with straw, then developed after that by the ancient Egyptians building their walls with adobe bricks or stone in pillars

Clay material

Mudbricks

Oval dwelling shape

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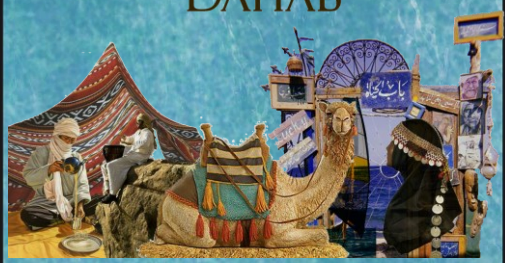
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7



Structure System

Clay constructions

There are multiple building systems that can be built with clay, the most important of which are:

Pressurized clay walls حوائط الطين المضغوط :

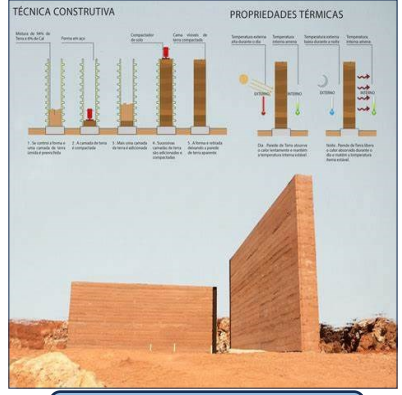
The soil used in its construction is composed of stones, gravel, sand, fine sand, and clay (clay) in a balanced ratio. The soil is compressed between tensioners to gain high hardness, and a sufficient percentage of clay or clay is used to provide the greatest amount of cohesion, and a percentage of sand is used to prevent cracking when dry.

Milk bricks (clay molded into molds by hand) طوب اللبن :

The soil used here should have fewer stones and pebbles than the other ingredients and is easy to mold by hand. It should also contain enough sand to prevent cracking.

Diluted clay الطين المخفف :

The soil used is free of stones and pebbles and the percentage of sand is low, so it is mostly composed of clay, so it is mixed with straw or sand to prevent cracking. It is used in the construction of walls with wood structures where the wood is covered with clay.



Pressurized clay walls

Milk bricks

Diluted clay

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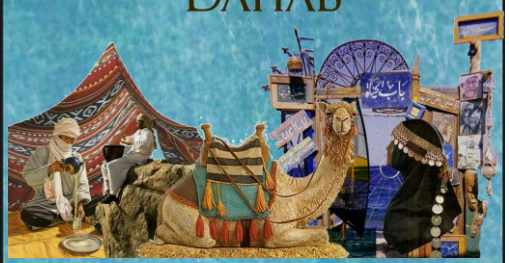
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7



Structure System

Clay constructions

Clay bricks belong to the family of ceramics that have wide applications in the fields of construction, decoration, fine arts and utensils, the most important of which are the following:

1. Refractory Bricks : It includes bricks of all shapes and types used in the construction of internal and external walls (and can act as a load-bearing structural element) and is made in metal or wooden molds of clay mixed with water and added with 25-30% sand to reduce shrinkage, and is shaken hydraulically to remove air bubbles from it and burned in ovens at a temperature of 900-1000 degrees Celsius to acquire the required hardness.

2. Roof Brick: It includes the pieces used to cover the roofs of pitched buildings (trusses).

3. Ceramic tiles: The word comes from the Greek word Keramos, which includes non-metallic materials formed by heat, and includes glazed clay tiles (ceramics) used in tiling floors and walls that are exposed to high levels of moisture, such as ponds, kitchens and bathrooms.

Refractory Bricks

Roof Brick

Ceramic tiles

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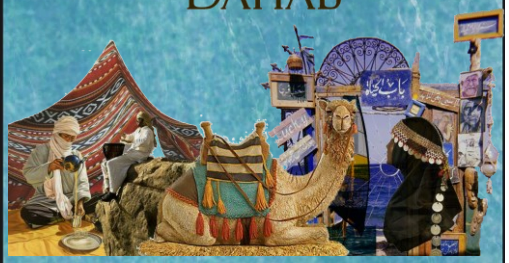
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7

دهب
DAHAB



Structure System

Clay constructions

4. Porcelain: It is made according to an ancient technique dating back three thousand years, and it is from the same family of clay used in ceramics known as China Clay, which contains a high percentage of kaolin, which turns into vitrification or glazing, which gives it hardness and low water absorption when heated, and is known in the specifications as Full-Body.

5. Sanitary parts: They include sinks, toilets, urinals, etc.

It remains to be said that clay bricks are a relatively cheap building material that can be easily manufactured to fulfill people's growing need for housing.

Advantages of clay:

- Clay material has very high sound insulation
- The thermal conductivity of Mudbricks allows you to do without insulation in southern and even middle latitudes
- the building can be given the most bizarre configurations inside and out
- Saman is the cheapest of all building materials
- Compared to heat-insulating porous concrete, Mudbricks hold fasteners better

Disadvantages of clay:

- The bearing capacity of the material is low. Even the second floor cannot be built without solid reinforcement.
- Moisture resistance and frost resistance of Mudbricks is low
- The natural color of Mudbricks is unattractive. Most often the walls are plastered

Porcelain

Sanitary parts

Mudbricks

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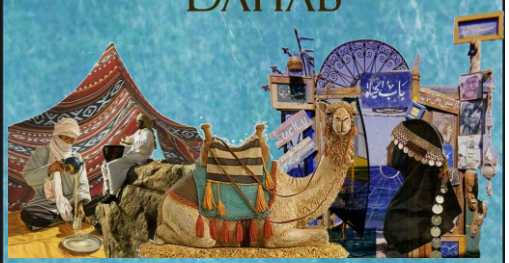
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7



Structure System

Clay constructions

The technology of building Mudbricks walls depends on the material used - light or heavy adobe. However, the filling is not rational.

The surface of the foundation is leveled, waterproofed with mastic or roofing material.

- A row of Mudbricks is laid. The corners are set first. A thread is pulled between them and all the rest is laid on it.
- For laying, take a liquid paste of adobe. The thickness of the seam is about 1 cm. It is recommended to lay no more than two rows of yogurt per day so that the solution has time to dry and harden.
- Laying bricks instead... If size correction is required, use hatchet.
- The thickness of the outer walls is **not less than 60 cm**, inner - **30 cm**.
- Along the perimeter of window and door openings, as well as at the joints of the walls, they are laid every 50 cm reed stalks or brush... It serves as an engine.

Exterior and interior cladding

It is necessary to trim the walls of the adobe. The material absorbs moisture and will not stand for a long time. The traditional option is plaster... Vapor-permeable compositions are chosen, such as silicate and lime. It is better not to take cement, it does not adhere well to uncooked clay.

Allowed and other finishes: Lining, boards, siding, bricks. The latter should be laid with a gap between adobe and stone.

Used for interior decoration gypsum and clay... Can be tiled. It is better not to use plastic panels as they do not allow vapor to pass through.

techinfus.com) منزل من الطوب اللبن: ما هو ، ما هو ، إيجابيات وسلبيات ، التوصيل الحراري)

Outer wall

Exterior cladding

Interior cladding

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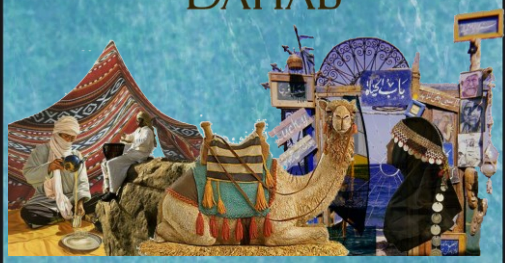
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7

ذهب
DAHAB



Structure System

Frames

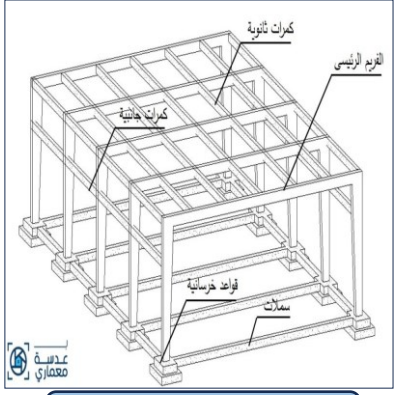
Concrete Frames System:

- This system is similar to a pole, but in an advanced way (as the pole and the pole are one body), which helps in strength and durability.
- It can be used in more than one type, whether wood, concrete or iron.
- Concrete can be poured on site or prefabricated to speed up time and facilitate installation.

Structural (concrete): -The column is fused with the camera as if they were one body.

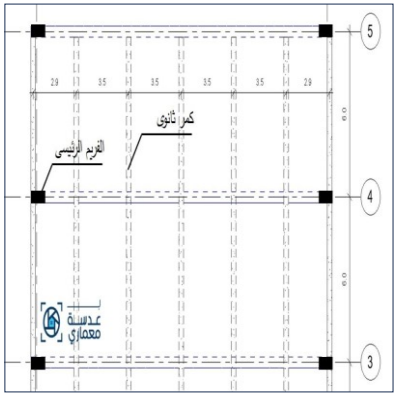
- The minimum dimension of the column is **40 * 60 cm**.
- The sea covers up to **20 m** (in concrete).
- It covers larger areas (in iron).
- The depth of the camera is equal to the sea / 16 (cm).
- The thickness of the slab is 10 cm.
- The distances between the frameworks range between 4: 6 m.

Use : Used in spaces that do not need columns in the middle, such as (**halls - stands - meeting halls**).



Frames

Frame section



Frame plan

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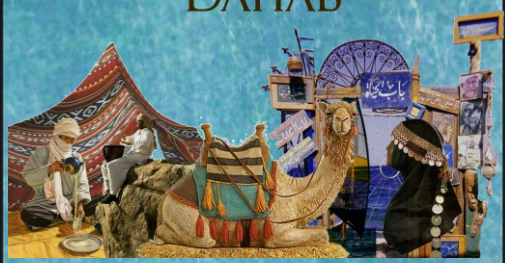
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7



Structure System

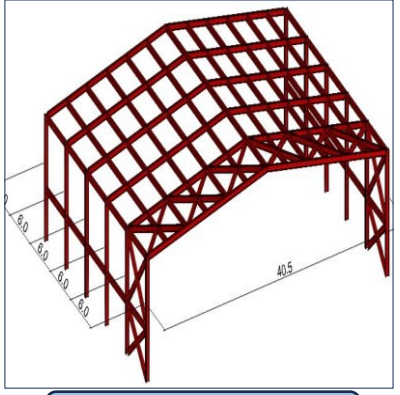
Frames

Steel Frames:

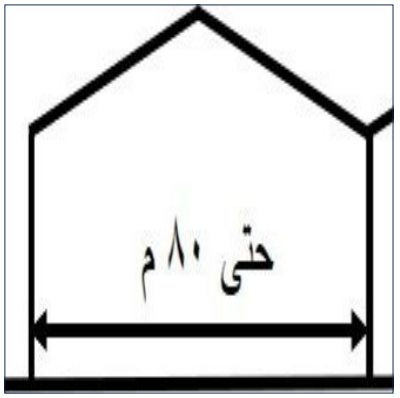
- Similar in composition to concrete frames, but here the material of origin is iron.

- Structural (iron): - It consists of a column and a steel sleeve, either bolted or welded together.
- The shaft and sleeve can take several shapes, either the letter I, which is the most famous, or the letter L or the letter C (depending on the design).
- The sea covers even large areas depending on the shape of the tires used.
- The thickness of the slab is 10 centimeters.
- The distances between the frames range between 4: 6 meters.

Use : Usually used in **factories, exhibitions, theaters, or coverings** that do not require the fall of columns in the middle.



Frames



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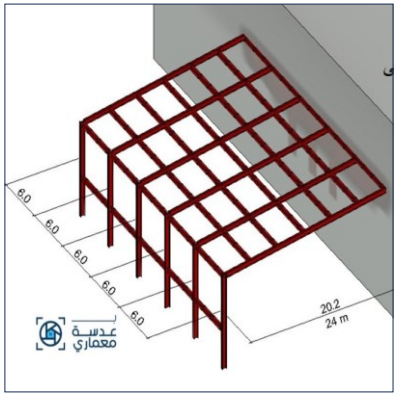

Frame exterior

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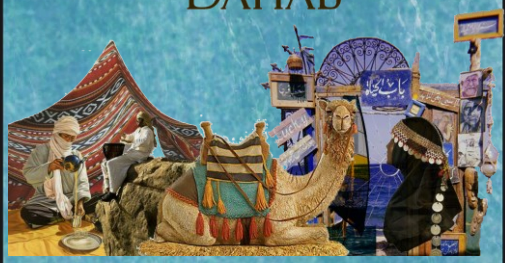
CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
-Structure system
CHAPTER 7

ذهب
DAHAB

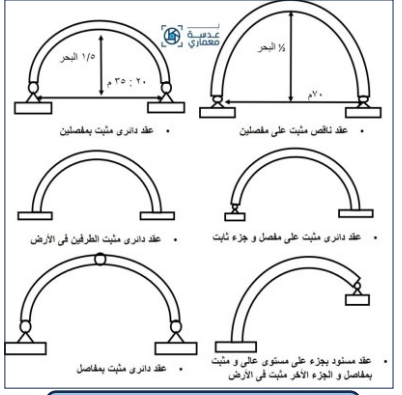


Structure System

Structure systems

Curved tires:

- There used to be an issue with this type at the point where the tire meets the ground, but due to advances in construction it has been addressed.
- It covers a sea of 20 : 35 m if the height of the tire is 1/5 of the sea area.
- It may reach 70 m if the curvature is increased.



Curved tires

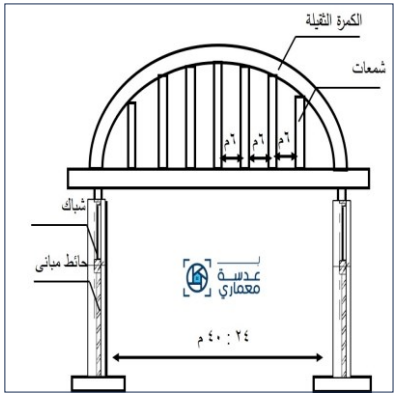
Heavy beam:

This system is based on the beams as they are the main ones in the origin.

Structural (concrete): The sea covers up to 30 : 35 m.

- The piles are 25*25 cm in size.
- The distances between the beams range between 4: 6 m.

Use : Used in places that need a large space and natural lighting from the ceiling. - Used to carry the structure such as bridges.



Heavy beam

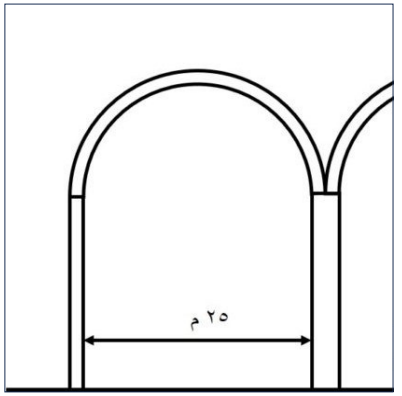
Crustacean system:

- This system is designed with a concrete roof with a simple thickness and takes curved or ribbed shapes to reduce the load on the roof and we can use it to cover large seas.
- It consists of concrete that is poured together and interconnected.
- Or it can be prefabricated and held together by nails.

Structural: The sea covers 25 : 50 m.

- The thickness of the slab is equal to 8 cm.
- The distance between units is up to 10 meters.

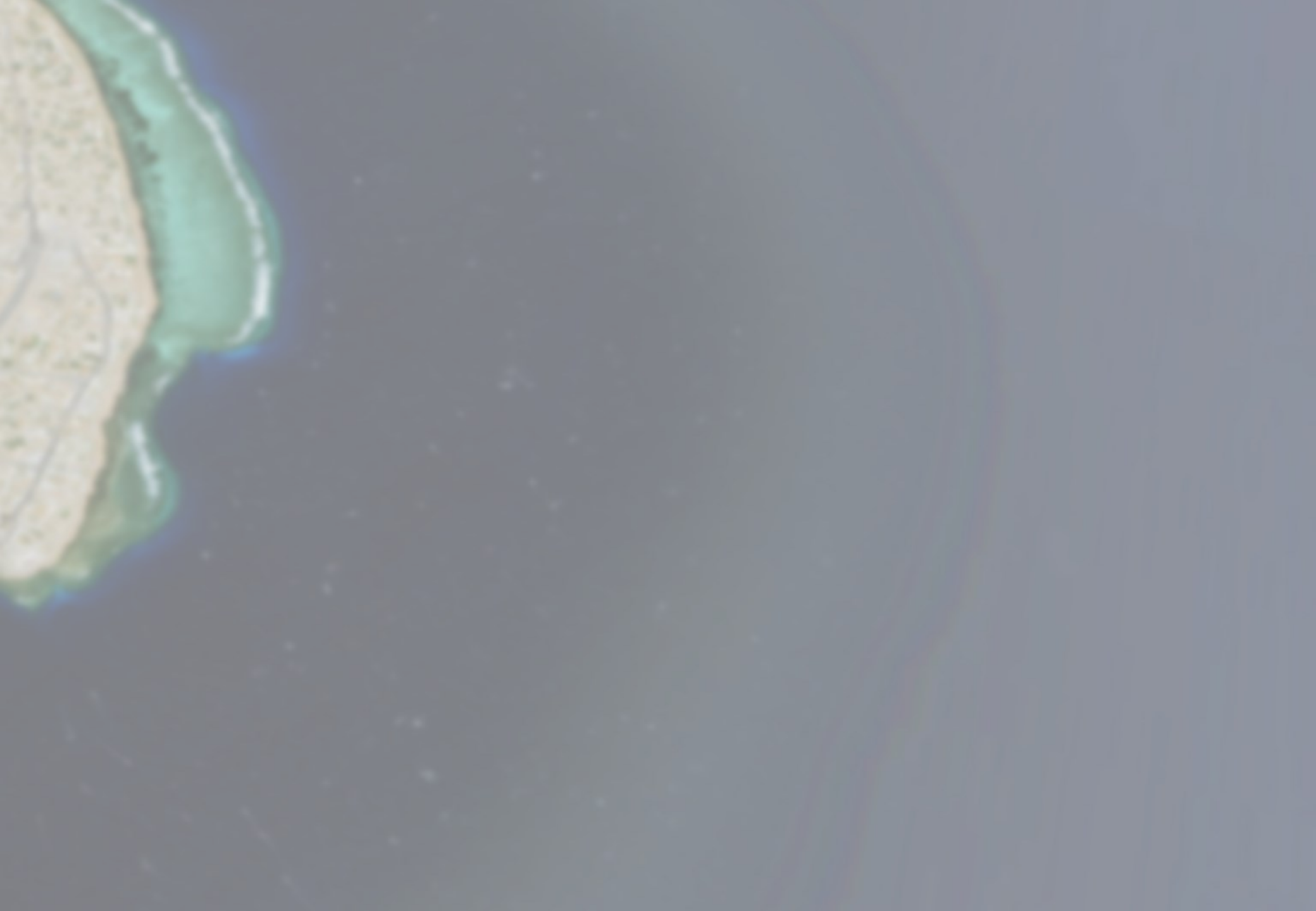
Use : -Used to cover large spaces that do not need columns, so it can be used in libraries, airports, mosques and others.



Crustacean system

CHAPTER 7

- **Site Analysis**



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CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7
- Site Analysis

Location: South Sinai, Egypt
Total Area: 418 sq mi, (1,083 km^3)
Elevation: 69 ft (21 m)
Population (2021):-
- **Total:** 3,106
- **Density:** 7.4/sq mi (2.9/km^2)

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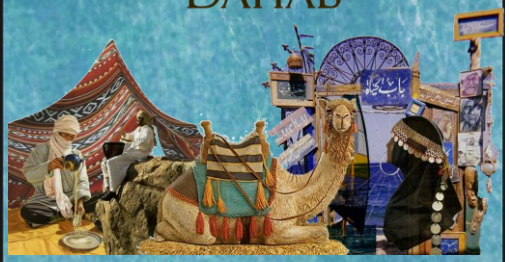

Site Analysis

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وش تونس
WSH - TUNIS

CHAPTER 1
CHAPTER 2
CHAPTER 3
CHAPTER 4
CHAPTER 5
CHAPTER 6
CHAPTER 7
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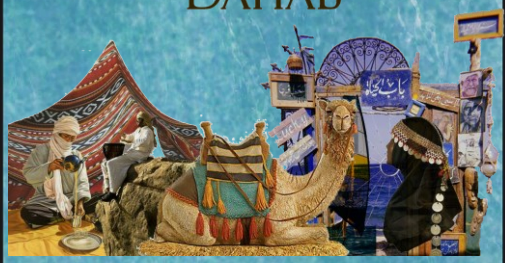

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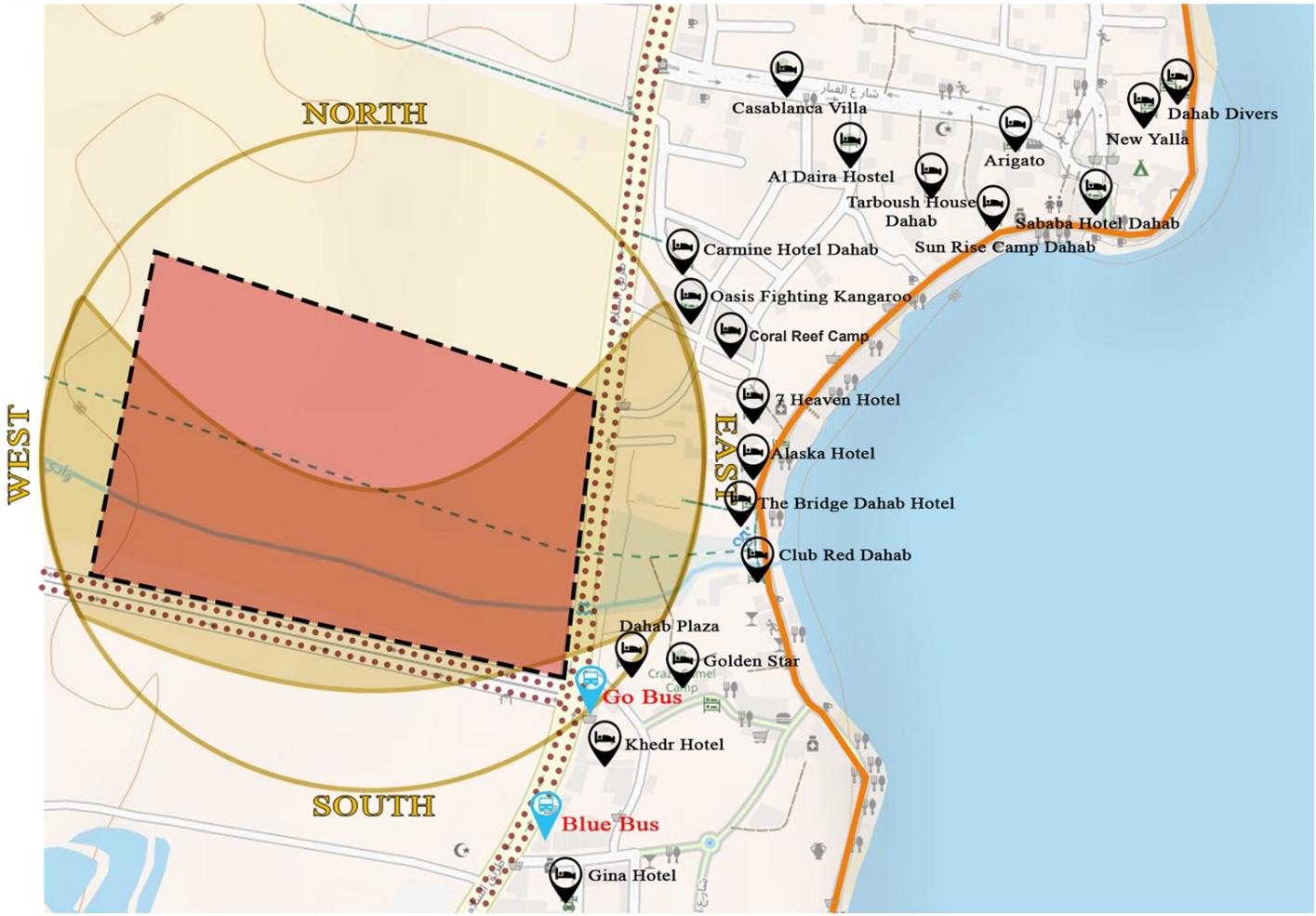

Climate data for Dahab													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean daily maximum °C (°F)	21.0 (69.8)	22.4 (72.3)	25.3 (77.5)	28.7 (83.7)	32.2 (90.0)	34.7 (94.5)	35.5 (95.9)	35.8 (96.4)	33.5 (92.3)	30.5 (86.9)	26.5 (79.7)	22.2 (72.0)	29.0 (84.3)
Daily mean °C (°F)	15.6 (60.1)	16.7 (62.1)	19.6 (67.3)	22.9 (73.2)	26.1 (79.0)	29.0 (84.2)	30.2 (86.4)	30.4 (86.7)	28.4 (83.1)	25.1 (77.2)	21.1 (70.0)	16.8 (62.2)	23.5 (74.3)
Mean daily minimum °C (°F)	10.2 (50.4)	11.0 (51.8)	14.0 (57.2)	17.1 (62.8)	20.1 (68.2)	23.4 (74.1)	24.9 (76.8)	25.0 (77.0)	23.4 (74.1)	19.8 (67.6)	15.7 (60.3)	11.5 (52.7)	18.0 (64.4)
Average precipitation mm (inches)	1 (0.0)	2 (0.1)	2 (0.1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.0)	1 (0.0)	2 (0.1)	9 (0.3)
Average rainy days	1	1	1	1	1	0	0	0	0	1	1	1	8
Mean daily sunshine hours	8	9	9	10	11	13	13	12	11	10	9	8	10

The Bridge Dahab Hotel

Sun Rise Camp Dahab

Dahab Divers Hotel

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JOUMANA BASSEM YOUSSEF

2019022

Thebes Higher Integrated Institution

Graduation Project

Scan for a message....

Special thanks to all the professors that I've learned from since day one in this college and to all the TA Staff that I appreciate and am very grateful to get the chance to be their student through the five years of studying architecture.

A specific thanks to professor Youssef el Samalouty for his efforts in my graduation project.
Another speech of appreciation to the greatest TA ever ENG/ Engy Ibrahim for her support through many courses and her efforts that means a lot to me

Last, but not Least, I have to say that I'm so grateful for having my family and friends by my side, for always supporting me and being proud of me whatever the results are, I'm always thankful for having you in my life.

THANK YOU!!!
Family: Bassem, Jaklien, Rahem.
Sisters: Sandra, Darine.